Journal of the

American Pharmaceutical Association

Practical Pharmacy Edition

Volume XVI Number 10

Committee on Publications

DON E. FRANCKE, *Chairman*
ROBERT P. FISCHELIS
JOHN B. HEINZ
R. Q. RICHARDS
HUGO H. SCHAEFER

☆

Editor

ROBERT P. FISCHELIS

Associate Editor

SAMUEL W. GOLDSTEIN

Managing Editor

ROBERT I. BISCHOFF

Assistant to the Editors

CATHERINE WYGOD

Staff Associates

GEORGE B. GRIFFENHAGEN
GLORIA NIEMEYER
JUSTIN L. POWERS
CHARLES C. RABE

Circulation

FELIX B. GORRELL

Membership

MARY LOUISE BERGNER

☆

Copyright 1955

American Pharmaceutical Association
2215 Constitution Ave., N. W.
Washington 7, D. C.

Table of Contents **OCTOBER 1955**

FEATURES

Diabetes Week . . . . . Front cover and 597
Straight from Headquarters 606
An Improved Technique for Preparing Glycerin Suppositories U.S.P. 609
Extemporaneous Preparation of White Lotion 611
Stability of Emulsions Prepared with Hard and Distilled Water 613
Vitamins Properly Classified 616
Changing Aspects in Pharmaceutical Practice Viewed Internationally 618
Preparing Pharmacy for Its Role in Atomic Medicine . . . 622

DEPARTMENTS

A.PH.A. Branches 640
Collector's Corner 600
FDA Criminal Actions 598
Hospital Pharmacy 602
Letters 590
New A.PH.A. Members 604
New and Nonofficial Remedies 598
News and Notes 636
New Prescription Products 642
Prescription Information Service 592
Progress in Medicine 594
Typical Days 626
Washington Views 588

The Journal of the American Pharmaceutical Association is published monthly by the American Pharmaceutical Association in two editions: Scientific Edition and Practical Pharmacy Edition, under the supervision of the Committee on Publications of the Council of the Association. Publication Office: 20th and Northampton Streets, Easton, Pennsylvania.

Executive, Editorial, and Advertising Offices: 2215 Constitution Avenue, N.W., Washington 7, D. C. Robert P. Fischelis, Secretary and General Manager.

ANNUAL SUBSCRIPTION—Journal of the American Pharmaceutical Association, Practical Pharmacy Edition and Scientific Edition combined: United States, Canada, Pan America, Spain and Philippines, $10.00; other foreign, $12.00.

Journal of the American Pharmaceutical Association, Practical Pharmacy Edition alone; United States, Canada, Pan America, Spain and Philippines, $5.00, other foreign, $6.00.

Journal of the American Pharmaceutical Association, Scientific Edition alone: United States, Canada, Pan America, Spain and Philippines, $6.00, other foreign, $7.00.

Members of the American Pharmaceutical Association receive the combined subscription as a part of their annual dues. Members may request omission of either edition, but this will not reduce the amount of the annual dues.

Single copies: Journal of the American Pharmaceutical Association, Practical Pharmacy Edition, United States, Canada, Pan America, Spain and Philippines, $0.50; other foreign, $0.60. Scientific Edition, United States, Canada, Pan America, Spain and Philippines, $0.60; other foreign, $0.70.

Back issues of unbound Journals same price as current volume. Subscription rates are subject to change without notice.

CHANGE OF ADDRESS—Members and subscribers should bear in mind that second class matter is not forwarded by the Post Office, and should supply both the Post Office and the American Pharmaceutical Association with any change of address immediately upon its occurrence.

CLAIMS for missing numbers will not be allowed if received more than 60 days after the date of issue, or if loss was due to failure to give 30 days' notice of change of address.

Claims asserting that Journals are "missing from files" cannot be allowed.

The Association cannot accept responsibility for foreign delivery when its records indicate shipment has been made.

ENTERED as second class matter January 23, 1917, at the Post Office at Easton, Pennsylvania, under the act of March 3, 1879, as 24 times a year; Scientific Edition monthly on the 5th; Practical Pharmacy Edition monthly on the 20th. Acceptance for mailing at a special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 10, 1918.

Washington Views

Population forecasts by the Census Bureau indicate that the number of people in the age group 65 and over will increase more than 50% by 1975. There are now approximately 14 million people in this age group in the United States, and Census Bureau statisticians forecast that this number will increase to about 21 million within 20 years. In the age group 50–64, an increase of 8 million is expected. Obviously, there will be a mounting problem of providing health services for this ever-increasing number of elderly citizens. Only 30% of people 65 years old or more are now protected by some kind of prepaid hospitalization insurance.

Dr. Frank E. Wilson, until recently Director of the American Medical Association's Washington office, has been appointed executive vice president of the recently created Joint Blood Council, Inc., with headquarters at 1832 M Street, N.W., Washington, D.C. Dr. Thomas H. Alphin succeeds Dr. Wilson as Director of the AMA's Washington office.

According to Department of Labor statistics, charges for medical and dental services and hospitalization have risen 28.2% since 1949 as compared with increases in food prices of 11.6%, apparel 4.6%, transportation 25.3%, and all consumer commodities and services combined 14.9%.

A Subcommittee on Narcotics of the Committee on Ways and Means of the House of Representatives, headed by Congressman Hale Boggs of Louisiana, has been conducting hearings to develop information on the so-called "barbiturate problem" to determine what further Federal regulations may be necessary. On October 19 Dr. Leo H. Bartemeier, chairman of the AMA Committee on Mental Health; Dr. Morris H. Seevers of the AMA Council on Pharmacy and Chemistry; and Secretary Robert P. Fischelis of the A.Ph.A. appeared before the committee. They were in agreement that Federal regulation under the Harrison Narcotic Act for barbiturates seems unnecessary and that state enforcement should be given opportunity to demonstrate control possibility before the professions are subjected to more drastic Federal regulation of these drugs. Federal Narcotic Commissioner H. J. Anslinger agreed with this contention. Secretary Fischelis reviewed for the committee the progress which has been made in the adoption of the National Drug Trade Conference Uniform State Barbiturate Law since 1946 and urged greater cooperation between FDA and state enforcement agencies.

Dr. Lloyd E. Blauch, well known as co-author with Dr. George Webster of the volume dealing with the pharmacy cur-

. . .and last-minute news

riculum, has been named Assistant Commissioner for Higher Education in the Department of Health, Education, and Welfare.

The drug industry is contributing approximately $125,000 to bring some 1,000 selected high school and junior college teachers to the 5th Annual Industrial Council sponsored by Rensselaer Polytechnic Institute of New York, October 27, 28 and 29, under the chairmanship of Robert A. Hardt. A galaxy of top-flight industry representatives will furnish the program for this educational effort.

Methods by which a small business owner can appeal the Internal Revenue Service findings on his income tax are explained in a leaflet entitled "Appeal Procedure for Income Tax Cases," obtainable from the Small Business Administration's agency field offices.

Dr. Herold C. Hunt, well-known educational administrator and consultant, has been named Undersecretary of Health, Education, and Welfare. He will be second in command of the Department of Health, Education, and Welfare under Secretary Marion B. Folsom.

HEW Secretary Folsom has announced the broadening of priority age groups for administration of the Salk vaccine to include children from birth through 14 years of age.

The Federal Food and Drug Administration has recommended that salicylate preparations labeled with directions for use should bear clearly visible and in boldface type a statement similar to the following:

"Warning—Keep out of the reach of children"

or

"Warning—Keep this and all medications out of the reach of children"

Labeling of salicylate preparations for oral use for children under 3 years of age should bear a statement such as:

"For children under 3 years of age, consult your physician"

These labeling recommendations are applicable to preparations containing aspirin, salicylamide, salicylic acid and its salts and other salicylic acid derivatives used as analgesics. They do not apply to oil of wintergreen, which is subject to special labeling, effervescent salicylate preparations, and preparations of para-aminosalicylic acid and its salts, which are not labeled with directions for use as analgesics. A period of six months from October 11, 1955, will be allowed for modification of existing labeling to comply with the foregoing suggestions.

LETTERS

What Would You Do?

Sirs:

I have a problem that I would like your comment on.

I am employed by a private drug store and the salary is exceptionally good. But the owner has been selling "caution" drugs for a long time over the counter without a prescription.

He would like me to do the same thing, but I have not done anything dishonest and this to me is a disgrace—playing with the lives of people who do not know the actions of dangerous drugs. And as far as I can see, the man for whom I work does not know either.

Now, if you were in my place, what would you do? Resign from the job? Tell him to stop over the counter sales of "caution-labeled drugs"? Report him? Or something else?

Illinois R.S.V.P.

Allergy Relief

Sirs:

Your article entitled "Inventory for Allergy Relief" which appeared in the August 1955 edition of THIS JOURNAL interested me greatly, particularly because of my enthusiasm for that subject. It is well written, concise and informative and should certainly be a valuable aid for the retail pharmacist as well as the teacher. In fact, the entire JOURNAL for August is chock-full of practical subjects; no enterprising pharmacist should be without it!

It is encouraging to note that the JOURNAL has developed a policy of emphasizing matters of particular importance to practicing pharmacists.

University of Pittsburgh PROF. EDWARD P. CLAUS

"It's About Time"

Sirs:

I appreciate very much the work being carried on by the AMERICAN PHARMACEUTICAL ASSOCIATION to promote the welfare and professional standing of American pharmacy. Both the Practical and Scientific Editions of your magazine are superb in every respect.

I think it's about time that every pharmacist started giving more time and consideration toward backing his professional organizations and applying more pressure on them to plug for a true profession, that is, pharmacy for pharmacists. It appalls my gall to find so many non-pharmacists practicing the profession under the auspices of people who are registered pharmacists and should be interested in the protection of their profession. I wish to call upon the AMERICAN PHARMACEUTICAL ASSOCIATION to sponsor a grass roots drive to tighten up on the state regulations governing the practice of pharmacy and to rid the profession of the imposters now doing us such great harm.

A good place to start this program would be at the state association level by the barring of non-pharmacists from any active participation in the association's affairs. Pressure from an active and professional organization can be brought to bear on the state boards of pharmacy and the law enforcement agencies to get rid of the impostors now practicing pharmacy. I'm sure there must be thousands of pharmacists who stand ready to give all their time and resources to save pharmacy for pharmacists.

You may be sure of my support in the future as in the past. Thank you for what you are doing.

Dalton, Ga. CHARLES W. MERRITT

Medical Service Corps Training

Sirs:

It has been several months since I received your letter to servicemen and have finally gotten around to answering it. For the most part, pharmacists seem to have been well taken care of by the Medical Service of the U.S. Army.

For my part, I came in with the June graduation classes of pharmacy colleges all over the country, and since I didn't have my degree it was difficult for them to permit me to perform as a pharmacist. In October of 1953 I was sent to the Meat and Dairy Hygiene School in Chicago. This, to my mind, is one of the best schools that the Army has for training purposes. It was here that I was given intensive training in the process of buying foods of animal origin for the Armed Services.

In March of 1954 I was sent to the 4th Army area and finally to Dallas, Tex., where I have been stationed ever since. All in all this has been a very enlightening experience for, among other things, I have been able to see the parts and organs of animals retained by the packing houses for resale to pharmaceutical houses for medicinal preparations.

There are many more pharmacists in the Armed Services than can be utilized, but in my case the Army has put to use specialized knowledge I have received in the medical field and made it profitable both to themselves and myself. So, although in most cases a pharmacist is unable to practice his profession in the Service, he is placed with the medical profession so that he won't lose complete sight of his primary vocation.

St. Louis, Mo. JAMES MCCALPIN

this month Roerig is pushing... new

STIMAVITE* TASTITABS*

for growth

specially designed for children

1. *Who don't eat enough*
2. *Who won't eat in balance*

The STIMAVITE Tastitabs formula:

Vitamin B_1	*10 mg.*
Vitamin B_6	*3 mg.*
Vitamin B_{12}	*20 mcg.*
Vitamin C (as Sodium Ascorbate)	*25 mg.*
L-lysine	*15 mg.*

Important factor for protein improvement

In bottles of 30 Tastitabs which literally melt in the mouth.

NEOBON*

5-factor geriatric supplement

NEOBON is specifically formulated for the geriatric patient. Each of NEOBON's five factors is needed to relieve, prevent or ameliorate one of the five common problems of aging. In soft, soluble capsules. Bottles of 60.

ROERIG Rx

CHICAGO 11, ILLINOIS

*trademarks

℞ information service

Members of the American Pharmaceutical Association are invited to submit their professional problems to The Journal, 2215 Constitution Ave., N. W., Washington 7, D. C. Inquiries should include all pertinent details.

Euphyllin and Endojodin

Can you give me any information on the following products prescribed by a foreign physician: "Enphyllin Tablets" and "Endojodrin Amps.?"—C. L. P., Pennsylvania.

The "En" is apparently a misspelling in the first name and the "r" was added to the second. The foreign product "Euphyllin" is a trade name for theophylline ethylenediamine, or aminophylline, which is available from many U.S. distributors in tablet form.

Endojodin (Iodisan) is hexamethyldiaminoisopropanol diiodide. It is available as a 20% solution in 2-cc. ampuls from Bayer, Leverkusen (Germany) and can be purchased through their U.S. distributor, Metachem, Inc., 515 Madison Ave., Suite 3900, New York 22, N.Y.

Citrates Solution

How can a clear, lime-flavored, aqueous solution be prepared from the following prescription?—E. Z., Ohio.

Sodium citrate	*2.67 Gm.*
Potassium citrate	*2.67 Gm.*
Ammonium citrate	*0.52 Gm.*
Tinc. hyoscyamus	*2. cc.*
Water, q.s.	*30 cc.*

(*Avoid alcohol, as much as possible.*)

The high salt concentration in this prescription and the addition of water will cause a separation of the alcohol-soluble material from the tincture. The resulting turbid mixture could be clarified by filtration, using a filter aid. To avoid the filtration step, the tincture could be replaced with the equivalent amount of the alkaloids or alkaloidal salts (about 0.08 mg. of hyoscyamine + hyoscine). The lime flavor could be added by first preparing a dispersion of lime oil, 2 cc., in Tween 20, 11.5 cc., and adding a sufficient quantity of the oil solution in small portions to the water with constant stirring. Use the flavored water as the vehicle for the salts.

The salts in the prescription can be dissolved slowly in as little as 6.5 cc. of distilled water to make approximately 9 cc. of clear aqueous solution. A clearer solution appeared to result when the sodium and potassium citrates are dissolved separately and the solutions mixed. Sufficient water to make 30 cc. can be added.

Buffered Eye Solution

Would you give us a proper procedure for compounding the following prescription.—G. O. C., Washington, D.C.

$ZnSO_4$	*32 mg.*
Boric acid	*455 mg.*
Adrenaline Chlor. 1:1000	*1 cc.*
Holocaine HCl	*43 mg.*
Buffer sol., q.s.	*15 cc.*

Hind and Goyan, J.A.PH.A., *Sci. Ed.*, **36,** 33 (1947), recommend the use of a buffer solution containing 2.2 Gm. of boric acid per 100 cc. for ophthalmic solutions containing adrenaline, holocaine and zinc salts. They also recommend addition of 1:25,000 phenylmercuric nitrate as a preservative in the buffer solution. The amount of boric acid in the prescription (3%) exceeds the amount that would be in 15 cc. of the recommended buffer solution and will keep the preparation at a *p*H of about 5. Dissolve the boric acid in 13 cc. of boiled distilled water, then add the other ingredients, make up to 15 cc. with distilled water and, only if necessary, filter the solution into a sterile bottle. If the physician desires the addition of a preservative, a 1:25,000 phenylmercuric nitrate solution can replace the distilled water.

INTERESTED IN HANDLING NEW PRODUCTS

Young and aggressive sales organization consisting of eight highly trained representatives, covering retail drugstores, hospitals, physicians and religious institutions every six weeks in Quebec, Eastern Ontario, and Maritimes, would be interested in handling additional products beneficial to the above trade and profession. For information, write to J. M. Pepin, Lancet Limited, 1615 East Lagauchetiere, Montreal 24, Quebec.

now...

ASSURED Penicillin Blood Levels

Wyeth announces a new antibiotic

PENICILLIN V

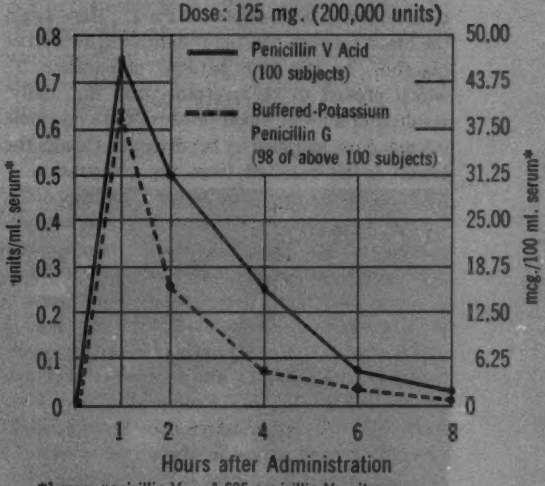
Penicillin V is a completely new penicillin formulated specifically for oral administration. Produced as a free acid, it possesses a particularly high degree of stability and durability. Virtually indestructible in the stomach, it is highly soluble and almost completely absorbed in the duodenum. Consequently, the diarrhea and alteration of intestinal flora often associated with other antibiotics are extremely unlikely. Because of maximal use of the administered dose, blood levels are predictably high and prompt.

Effective in the common infections caused by penicillin-sensitive bacteria. More active than potassium penicillin G against certain microorganisms.

It will be the physician's antibiotic of choice in streptococcal, pneumococcal, gonococcal and sensitive staphylococcal infections.

Supplied: Tablets, 125 mg. (200,000 units) each, bottles of 36. Also available: BICILLIN®-Vee Tablets, 100 mg. (100,000 units) benzathine penicillin G and 62.5 mg. (100,000 units) penicillin V; bottles of 36.

These are the blood levels . . .



*1 mcg. penicillin V = 1.695 penicillin V units
1 mcg. penicillin G = 1.667 penicillin G units

PEN·VEE·*Oral**

Penicillin V, Wyeth
Phenoxymethyl Penicillin

Wyeth®
PHILADELPHIA, PA.

*Trademark

Progress in Medicine

Hypotensive Action of *Rauwolfia Serpentina* and Reserpine

Observations on selected ambulatory patients with hypertension who were treated in a double hidden placebo study are reported by a Boston physician. Based on the 6 most reliable patients, he notes: "In one, 75 mg. *R. serpentina* appeared to be more potent in hypotensive action than 0.075 mg. reserpine. In another, unknown reserpine 0.05 mg. substituted in hypotensive action for 0.2 mg. known reserpine previously used, and in the same patient the placebo appeared to substitute for reserpine in either or both doses. In another patient *R. serpentina* 50 mg. daily seemed to have about the same hypotensive action as reserpine 0.1 mg. Here again the blood pressure was only slightly higher on the placebo. In the fifth patient, preparation *X*, which proved to be reserpine, 0.15 mg. daily, resulted in a lower blood pressure than reserpine 0.5 mg. daily supplied by her druggist, though the lowest levels resulted from the preparation *Y* which proved to be *R. serpentina*, 150 mg. daily. In the sixth patient *R. serpentina* 100 mg. appeared to have about the same or very slightly greater hypotensive effect than reserpine 0.05 mg.

As for side effects, 2 of these 6 good observers promptly recognized the placebo by the absence of side effects, another thought the placebo caused increased dreaming, a third ascribed sedative effects to the placebo. Reserpine caused nasal congestion in three, sedative effect in four, slight increased bowel action in three. *R. serpentina* resulted in nasal congestion in two, sedative effect in four, slight increased bowel action in four. None of these were reported as annoying."

[Palmer, R. S., *Am. Pract. and Digest of Treatment*, **6,** 1323(Sept. 1955).]

Erythromycin with Sulfonamides in Treatment of Gonorrhea

Erythromycin in combination with triple sulfonamides administered orally in enteric coated tablets containing 100 mg. of erythromycin and 83 mg. each of sulfadiazine, sulfamerazine and sulfamethazine gave good results in the treatment of acute gonorrhea in males. With 2 Gm. of the antibiotic and 3 Gm. of the mixed sulfonamides in three doses over a 12-hour period the cure rate was 92.3%. The sulfonamides appear to potentiate the activity of erythromycin, as had been noted with tetracycline in the treatment of gonorrhea. Toxic reactions in 140 patients were minimal and consisted of a transient nausea in 1 patient and loose stools in 2 others.

[Marmell, M., Shidlovsky, B. A., and Prigot, A., *Antibiotic Med.*, **1,** 450(Aug. 1955).]

Burns

Methods of treatment for severe burns are described by Dr. B. S. Jeremiah, *Rhode Island Med. J.*, **38,** 147(1955). He states that 9,000 deaths from burns occur every year in the U.S. In peacetime 83% of all burns occur in the home, 10% in industry and 7% in public accidents.

Accident Prevention

Kerosene causing 16% of 507 cases of accidental poisoning reported in a 1953 survey by the Committee on Accident Prevention of the American Academy of Pediatrics, was the second commonest toxic agent. A report by Dr. Hugh A. Carithers (*J.A.M.A.*, **159,** 109, Sept. 10, 1955) concludes with suggestions to physicians for accident prevention. For the pharmacist we select from the suggestions: Distribute pamphlets on accident prevention; they are available from several leading insurance companies and the National Safety Council. In dispensing drugs, stress the dangers of injudicious use and careless storage. As a guardian of public health and well-being, be a leader in community projects directed toward safety and accident prevention.

[See also editorial, THIS JOURNAL, **16,** 474, Aug. 1955.]

Radioisotope Indicates Heart Action

Injection of a minute amount of radioactive substance into the blood stream, then directing arterial blood into a specially designed Geiger counter and amplifying the output of a sensitive count-rate meter so it may be viewed as a moving spot on an oscilloscope screen provides a rapid and more accurate measurement of heart action. The moving spot is photographed with a recording camera to form a pattern of arterial dilution curves, and it is from this strip of film that a graph of the heart action is plotted quickly to indicate the cardiac output. The equipment, de-

vised by Dr. Rosalyn Yalow and Daniel Bibona of the Bronx VA hospital, is being used for clinical studies.

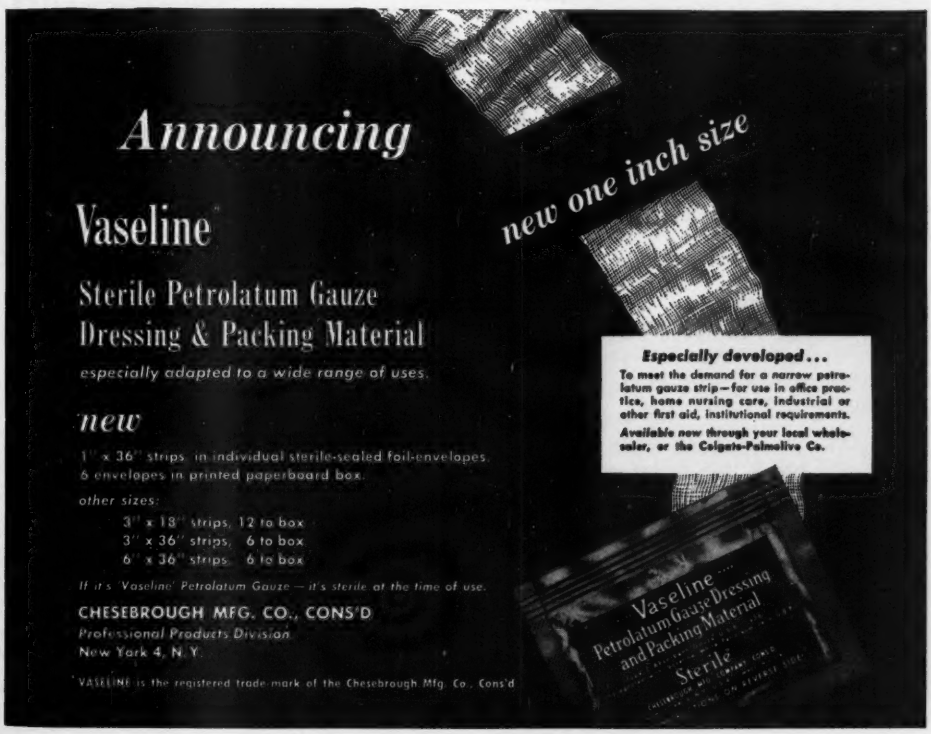
Prednisone and Prednisolone in Ophthalmology

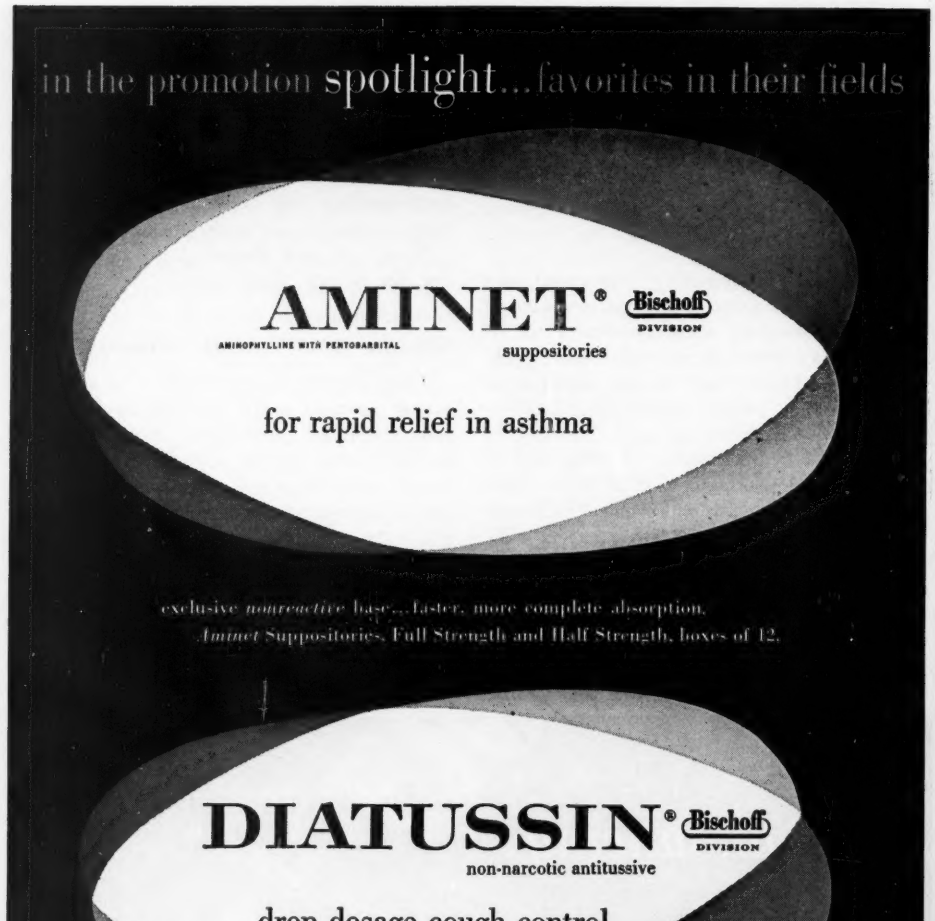
Results with prednisone (Meticorten) and prednisolone (Meticortelone) in the treatment of various inflammatory ocular conditions are reported by two Armed Services physicians. Animal experimentation and clinical observations reveal a rapid potent antiphlogistic activity which appears superior, in most instances, to cortisone and hydrocortisone. Several patients who responded poorly, or not at all to other steroids showed dramatic improvement with prednisone and prednisolone. Toxic effects associated with the systemic use of prednisone are minimal, and small maintenance doses will prevent remissions of many inflammatory ocular diseases. Indications and contraindications are similar to those already determined for cortisone and hydrocortisone. Owing to their rapid potent anti-inflammatory actions and the lack of serious systemic side-effects of prednisone, these new corticosteroids may well supersede previously known steroids in ocular therapeutics.

[King, J. H., and Weimer, J. R., *Arch. Ophthalmol.*, **54,** 46(July 1955).]

Silicone Skin-Protective Preparations

White petrolatum was found to be as good a barrier ointment as the best commercial silicone and nonsilicone protective ointments tested against various liquids, including soap and detergent solutions as well as cutting oils. Two of the six commercial silicone ointments were superior to the other four. Two silicone oils were ineffective, whereas two industrial silicone greases were excellent barriers according to results with the test used by C. R. Denton, *et al.*, A.M.A. *Arch. Dermatol.*, **72,** 7(July 1955).


Announcing
Vaseline
Sterile Petrolatum Gauze
Dressing & Packing Material
especially adapted to a wide range of uses.
new
1" x 36" strips, in individual sterile-sealed foil-envelopes, 6 envelopes in printed paperboard box.
other sizes:
3" x 18" strips, 12 to box
3" x 36" strips, 6 to box
6" x 36" strips, 6 to box
If it's Vaseline Petrolatum Gauze — it's sterile at the time of use.
CHESEBROUGH MFG. CO., CONS'D
Professional Products Division
New York 4, N.Y.
VASELINE is the registered trade-mark of the Chesebrough Mfg. Co., Cons'd
new one inch size
Especially developed...
To meet the demand for a narrow petrolatum gauze strip—for use in office practice, home nursing care, industrial or other first aid, institutional requirements.
Available now through your local wholesaler, or the Colgate-Palmolive Co.
Vaseline
Petrolatum Gauze Dressing and Packing Material
Sterile


in the promotion spotlight...favorites in their fields
AMINET®
Bischoff DIVISION
AMINOPHYLLINE WITH PENTOBARBITAL
suppositories
for rapid relief in asthma
exclusive nonreactive base... faster, more complete absorption.
Aminet Suppositories, Full Strength and Half Strength, boxes of 12.
DIATUSSIN®
Bischoff DIVISION
non-narcotic antitussive
drop dosage cough control
easy-to-take drops—high concentration and prolonged action—without sedation or gastrointestinal disturbance.
Diatussin, 6-cc. bottle with dropper.
Also available: Diatussin Syrup, 4-ounce, 1-pint, and 1-gallon bottles.
Intensive detailing, journal advertising, and direct mail promotion are focusing attention on these two established pharmaceutical favorites. Better stock up in anticipation of an even brighter sales picture.
AMES COMPANY, INC. • ELKHART, INDIANA

Diabetes Week November 13-19, 1955

Pharmacists can help the unsuspecting diabetic before it is too late by suggesting that he Check These Facts

It is estimated that there are more than 2 million diabetics in the United States, and half of that number are unaware they have the ailment. In other words, *one person in every 75 in this country is a diabetic.*

Approximately 3 million other persons living today are potential diabetics, which means that they will develop the disease sometime during their lives. At least 60,000 persons become diabetic each year in the United States.

Diabetes is hereditary. Of the total population of the United States, 40 million persons—or 1 out of every 4 persons—are believed to be diabetic "carriers." "Carriers" of diabetes are persons who are free of the condition themselves but who transmit the tendency to it.

Diabetes is known as the disease of complications, the most serious of which may be heart disease, failing eyesight, hardening of the arteries, kidney disorders, gangrene, cerebral hemorrhage, or diabetic coma.

It is because there is such a large number of hidden diabetics in our population, and even a larger number of people who are potential diabetics, that the principle of testing everyone for the disease every year should be put in practice.

Today the diabetic whose condition is being treated need have very little discomfort and still less fear. If he cooperates intelligently with his physician as to treatment, diet, and his pattern of living, he can expect to live long, usefully and happily—a life as normal in most respects as other people live.

The alleviation of diabetes is achieved principally by a careful diet, especially planned for the patient's particular needs and, when necessary, insulin administered in the doses he requires. Many diabetics do so well on diet alone that they do not need any insulin. Others, with more severe diabetes, require both diet and insulin.

Insulin is not an ordinary drug or medicine—it is an internal secretion of the pancreas. The diabetic's inability to make full use of the foods he eats is due to a lack of this secretion in his body, or to the failure of the insulin to be utilized properly.

MOST USUAL SYMPTOMS √	Increase in thirst Constant hunger Frequent urination Loss of weight Itching Easy tiring Changes in vision Slow healing of cuts and scratches
MOST LIKELY TARGETS √	Overweight Over 40 years old Related to known diabetics A woman after 40 (the chances are about a third higher than for a man)

Some people have diabetes without any symptoms at all. . . . You should be tested periodically. However . . . ANYONE can develop diabetes at ANY AGE . . . it might be YOU!

The Diabetes Detection Drive during Diabetes Week, November 13–19, is conducted by the American Diabetes Association in cooperation with its 39 affiliate units throughout the United States and with more than 900 county and state Medical Societies. During Diabetes Week, detection tests are provided in local communities.

Mr. Pharmacist, here is a further opportunity to serve your community in cooperation with your fellow *health team* members of the medical profession. At the same time, you will be serving yourself. Put the cover of this issue—put this article—to work for you! Display them and let your customers know that *your* pharmacy is information headquarters and supplier of all the diabetic's needs.

FDA Criminal Actions

DURING THE MONTH OF AUGUST 1955

Over-the-Counter Sales

Washington, D.C.—Selling sulfonamides without physicians' prescriptions. Fined $300 each.

Revere, Mass.—Selling and refilling prescriptions for amphetamines, barbiturates and hormones without physicians' authorizations. Firm and individual fined $250 each; individual given a 6 month suspended jail sentence and placed on probation for 1 year.

Revere, Mass.—Selling and refilling prescriptions for amphetamine, barbiturates, hormones, apiol, ergot, aloin and oil pennyroyal without physicians' authorizations. Firm and one individual fined $250 each; employee fined $100; each individual given a 6 month suspended jail sentence and placed on probation for 1 year.

Baldwin, N.Y.—Refilling prescriptions for barbiturates and sulfonamides without physicians' authorizations. Firm fined $100; individuals fined $700 each.

Substandard and Misbranded Drugs

Gotham Aseptic Laboratory Co., Inc., Long Island City, N.Y.—Adhesive bandages were nonsterile. Firm fined $500; charges against individual dismissed.

Sidney J. Cohen, New York, N. Y.—Quinine hydrochloride failed to bear labeling as required by law. Fined $250 and given an 8-month jail sentence.

Keith-Victor Pharmacal Co., St. Louis, Mo.—Shipping vitamin tablets deficient in declared amount of vitamin B_6. Fined $500 and court costs of $35.

Money in your pocket!

That's what our insurance savings mean to you . . . . . .

Available only to Druggists

Consult our Agent

New and Nonofficial Remedies

Admitted under new policy of A.M.A. Council on Pharmacy and Chemistry. For details, see J.A.PH.A., *Sci. Ed.*, 44, IV, VI, VII, Oct. 1955

ACETYL SULFISOXAZOLE—Gantrisin Acetyl—N′-(Acetyl-3,4-dimethyl-5-isoxazolyl) sulfanilamide—The acetyl derivative shares the actions and uses of the parent sulfonamide, sulfisoxazole (Gantrisin). The acetyl derivative is tasteless and therefore suitable for oral dosage forms. The oral dosage is expressed in terms of sulfisoxazole and calculated on the basis of 0.5 Gm. per 20 lb. of body weight as the initial dose, followed by one-half the initial dose every 4 hours. In severe infections the dose may be doubled.

BENOXINATE HCl—Dorsacaine HCl—A benzoic acid ester related to procaine, benoxinate HCl is an effective surface anesthetic agent useful in ophthalmology. It also has bacteriostatic properties. It is administered only by topical instillation in the eye. Two drops of 0.4% solution is usually adequate for tonometry; a third drop permits measurement of ocular tension and insertion of a contact lens. Within 4–5 minutes, three two-drop instillations at 90-second intervals usually insure adequate surface anesthesia for removal of an embedded foreign body in the cornea or for opening a chalazion through the conjunctival surface.

CARBINOXAMINE MALEATE—Clistin Maleate—A potent antihistamine with as low an incidence of side-effects as any other previously used histamine antagonist, carbinoxamine maleate does not potentiate epinephrine or exhibit local anesthetic action. It is given orally 4 mg. three to four times daily. Children over 6 years of age, orally 2 mg. three to four times daily.

ERYTHROMYCIN GLUCOHEPTONATE—Ilotycin Glucoheptonate—Erythromycin glucoheptonate is the glucoheptonate salt of erythromycin. It has the same action and uses as the base except that it is primarily suited for intravenous injection. Oral medication with the base or other salts should be resumed as soon as the patient can ingest and retain it. For intravenous injection, an initial solution should be prepared by completely

(*Continued on page 628*)

Tetrazets.

BACITRACIN-TYROTHRICIN-NEOMYCIN-BENZOCAINE TROCHES

in sore-throat weather—a 4-in-1 attack

MAJOR ADVANTAGES: Provide three potent antibiotics plus a soothing topical anesthetic. Effective against both gram-positive and gram-negative bacteria. Little danger of sensitization.

Winds and showers bring sore and inflamed throats; new TETRAZETS provide the ideal topical treatment.

TETRAZETS are soothing, pleasant-tasting troches, each containing bacitracin, tyrothricin and neomycin, with benzocaine, added for its anesthetic effect.

The 3 antibiotics together (1) enhance the antibacterial potency, (2) extend the antibacterial range, and (3) minimize development of secondary invaders.

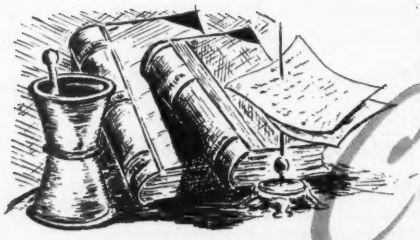
Prescribe TETRAZETS before and after tonsillectomies, too. They are valuable also as an adjunct to parenteral antibiotic therapy of deep-seated infections such as Vincent's infection.

Supplied: Vials of 12 troches, each troche containing 50 units zinc bacitracin, 1 *mg.* tyrothricin, 5 *mg.* neomycin sulfate with 5 *mg.* benzocaine.

SHARP & DOHME

Philadelphia 1, Pa.
DIVISION of MERCK & CO., INC.

This advertisement is appearing in current medical journals as part of Sharp & Dohme's promotion to the profession.



By George Griffenhagen

Collector's CORNER

Pharmacy Museums on the Continent

Switzerland

The largest single collection of pharmaceutical antiquities on the Continent is to be found in the Swiss Pharmaceutical Historical Museum, located in downtown Basel and maintained as part of the School of Pharmacy of the University of Basel. The museum was founded in 1927, under the curatorship of the late Dr. Joseph Anton Häfliger. Dr. Alphonse Lutz, a practicing pharmacist of Basel, is now serving as curator. Included in the three floors of historical exhibits are a 1700 and an 1800 apothecary shop restoration, as well as 17th, 18th and 19th century pharmaceutical laboratory restorations.

Other museum collections of pharmaceutical interest in Switzerland include the Castiglioni collection of pharmaceutical majolica now owned by Hoffmann-La Roche in Basel; an apothecary shop restoration in the Landesmuseum in Zurich; and the Reber collection of pharmaceutical antiques, originally organized as a separate museum in Geneva, but now housed in the Lausanne University Museum.

Holland

The Amsterdam Historical Medical-Pharmaceutical Museum is particularly noted for its large collection of Delftware pharmacy jars. The lower floor of the museum includes an authentic reconstruction of an early 19th century pharmaceutical laboratory based upon a painting of Anthoni d'Ailly's laboratory of 1818. The Delftware collection is displayed in an apothecary shop restoration of the Louis XVI period. In the upper room of the museum are displayed numerous items of pharmaceutical interest such as medicine chests and the typical Dutch "gaper" (the figures which served as sign boards for pharmacies in Holland over the years). The museum is under the direction of Curator Dr. D. A. Wittop Koning, a practicing pharmacist.

Another museum collection of extreme interest to pharmacists is the Rijksmuseum for the History of Natural Sciences located in Leiden. Miss Rooseboom, curator, and Mr. Star, assistant curator, proudly display their collection of pharmaceutical Delft, mortars, balances and weights, and a magnificent 17th century drug cabinet in the shape of a six-foot high bound leather book.

France

Dr. Maurice Bouvet of Paris, president of the Société de la Histoire de la Pharmacie, is proud to show visitors the Museum of the History of Pharmacy which is housed in a special room at the Faculty of Pharmacy, University of Paris; equally impressive is Dr. Bouvet's own personal collection, which is partially on display at Laboratories Goy at 23 rue Beautreillis in Paris. Public museums in Paris are filled with collections of pharmaceutical interest such as the Museum of the Assistance Publique and the Museum de Sèvres. Equally interesting are the numerous hospitals in France which maintain their pharmacy in the age-old tradition; examples include the hospitals of Saint-Germain-en-Laye; Saint-Jaques; Issoudin; and Hôtel-Dieu de Lyon.

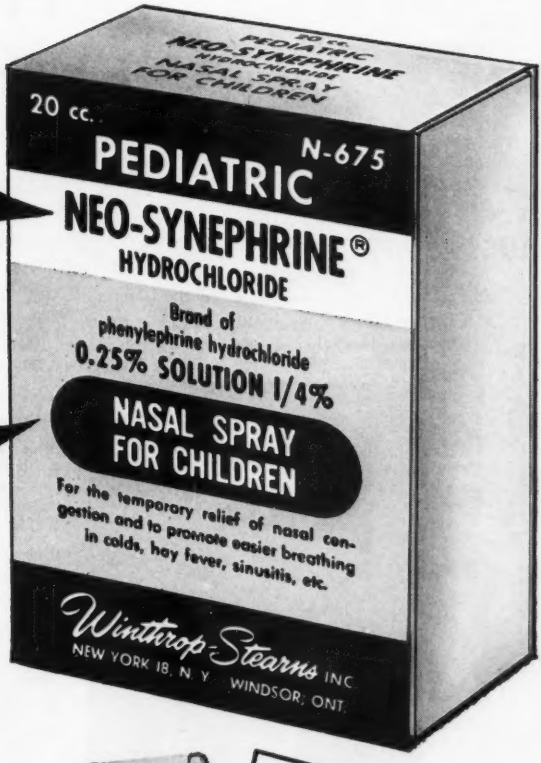
Germany

Even though war has taken a heavy toll of pharmaceutical museum collections in Germany, there is still probably more historical-pharmaceutical material preserved in Germany than in any other single country in Europe. The Deutsches Apotheker Museum currently has the largest single collection, housed in six rooms of the so-called New Residence in the ancient and picturesque town of Bamberg. Outstanding in the Bamberg collection is the large selection of

(Continued on page 629)

NEW!

nasal spray FOR CHILDREN



PUT IT ON YOUR "WANT LIST" NOW!

- Relieves nasal congestion, promotes easier breathing in children's colds, sinusitis and hay fever. Children easily learn to use Neo-Synephrine Pediatric Nasal Spray themselves without any adult assistance or fussing. Also well suited for adults who prefer an extra mild nasal spray.
- Contains Zephiran® Cl 1:5000, antibacterial wetting agent and preservative for greater efficiency.

Unbreakable plastic • Leakproof • Uniformly fine mist

PEDIATRIC NEO-SYNEPHRINE IS A "SELF-SELLER"

Extra sales on this high profit item when you display it in your baby needs department . . . on counters . . . near cash register.

ORDER BY THE DOZEN
available in this smart display carton.

WINTHROP

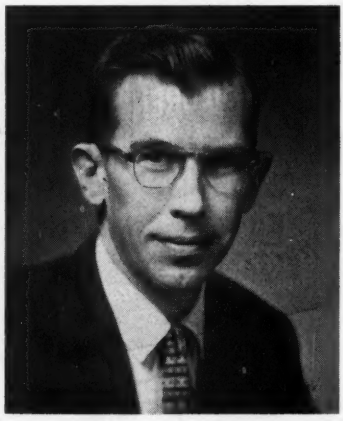
NEO-SYNEPHRINE®
HYDROCHLORIDE
nasal spray **FOR CHILDREN**

Winthrop-Stearns INC
1450 Broadway, New York 18, N. Y.
PHARMACEUTICALS IN DAILY DEMAND
ETHICALLY ADVERTISED AND DETAILED

Hospital Pharmacy

A.S.H.P. Officers for 1956–1957

Paul F. Parker, chief pharmacist at the University of Chicago Clinics in Chicago, Ill., has been elected president of the American Society of Hospital Pharmacists for the 1956–1957 term. Active in Society affairs over a period of years, he has been an assistant editor of *The Bulletin* since 1950. He also served during the 1954–1955 term as chairman of the Committee on Program and Public Relations and as a member of the Executive Committee. He is currently serving as secretary-treasurer of the Chicago Branch of the A.PH.A. and is also a delegate to the A.PH.A. House of Delegates.



Paul F. Parker

Mr. Parker was graduated from the University of Michigan School of Pharmacy in 1949 and served an internship in hospital pharmacy at University Hospital, Ann Arbor, Mich., receiving a Master of Science degree in 1951. He has also attended business college in Chillicothe, Mo., and served in the U.S. Navy from 1943 until 1945. Prior to accepting his present position in 1952, he was a member of the pharmacy staff at University Hospital, Ann Arbor, where he served as assistant to the chief pharmacist.

The vice president-elect, Milton Skolaut, is serving in the same capacity during the current year. He is chief of the pharmacy department of the Clinical Center, National Institutes of Health, Bethesda, Md.

Mr. Skolaut graduated from the University of Texas College of Pharmacy in 1941. He interned at The Johns Hopkins Hospital Pharmacy Department during 1941 to 1942. From 1942 to 1946 he was chief pharmacist of the University hospital and instructor in pharmacy at the University of Maryland in Baltimore. He managed a pharmacy in San Antonio, Tex., for one year in 1947 and then returned to The Johns Hopkins Hospital as assistant chief pharmacist.

In 1949 he entered the U.S. Public Health Service and was assigned as chief pharmacist at the U.S.P.H.S. Hospital, Staten Island, N.Y. In 1952 Mr. Skolaut was transferred to the Clinical Center to set up and start operation of the pharmacy department.

Sister Mary Berenice, chief pharmacist, St. Mary's Hospital, St. Louis, Mo., has been elected treasurer for a 3 year term beginning in 1956. A charter member of the A.S.H.P., she has served a term as treasurer of the Society and has also served on the Executive Committee.

She received her pharmacy training from the St. Louis College of Pharmacy and also attended St. Louis University. In addition to being a registered pharmacist in Mo. and Ill., she is a graduate nurse. She is a life member of the AMERICAN PHARMACEUTICAL ASSOCIATION and also holds membership in the American Association for the Advancement of Science.

The ballots were counted by a committee of 4 A.S.H.P. members appointed by President Claude L. Busick, and the results submitted to Secretary Gloria Niemeyer. Included on the Committee were Robert Simons, Memorial Hospital of Wilmington, Wilmington, Del.; Robert Statler, Veterans Administration Central Office, Washington, D.C.; Benjamin Wexlar, Philadelphia General Hospital, Philadelphia, Pa.; and John White, George Washington Hospital, Washington, D.C.

St. Paul, Minn. "As 'Benzedrex' knows no season, it has a permanent space on my wrapping counter. Displayed in the original carton, it outsells all other inhalers 4 to 1."

Theo. A. Miller
Dahl's St. Paul Pharmacy

College Point, N.Y. "The 'Benzedrex' Inhaler display has more than tripled my sales. Each sale means a satisfied customer."

John Rennemann
Rennemann's Pharmacy

new, improved display carton

This new, *improved* display carton is designed to at least double your Benzedrex* Inhaler sales.

Provides more effective display!

Requires 46% less counter space!

Set up your display NOW—and watch sales grow.

*T.M. Reg. U.S. Pat. Off.

Smith, Kline & French Laboratories, Philadelphia

1852 A·Ph·A 1955
SECOND CENTURY

MEMBERSHIP

THE ASSOCIATION EXTENDS A CORDIAL WELCOME TO THE FOLLOWING MEN AND WOMEN WHO WERE ACCEPTED FOR ACTIVE MEMBERSHIP DURING THE MONTH PRECEDING PREPARATION OF THIS ISSUE.

Records

CALIFORNIA

Fanciullo, Salvatore A., San Jose
Lester, Leland K., Hayward
Motta, Louis J., Los Angeles
Shimizu, Keido, San Mateo
Vossmeyer, Richard H., Los Angeles

COLORADO

Sister Mary Mark Swift, Denver

CONNECTICUT

Appell, Harry, Plainville
Burger, James E., New Britain
Powell, Linnea J. D., New Haven

DISTRICT OF COLUMBIA

Moore, Willis E.

FLORIDA

Hilliard, Marian, Coral Gables
Mount, William F., Orlando
Neimeth, Edith K., St. Petersburg
Robertson, Richard L., Jacksonville
Saks, Ben, Wauchula
Tolar, Ralph C., Jacksonville

GEORGIA

Bradley, Crisp L., Dalton
Wallace, Julius H., Smyrna

ILLINOIS

Dorevitch, Alexander, Chicago
Mayerson, Alexander C., Chicago

INDIANA

Cosby, Donald C., Indianapolis
Kesling, Estell F., Lafayette
Wendling Walter W., Vincennes
Wood, Donald N., Evansville

IOWA

Mount, George R., LeMars

KANSAS

Butler, Edgar W., Atchison

MASSACHUSETTS

Elkind, Bruce S., Worcester
Kalivas, Christ A., Haverhill

MICHIGAN

Baldwin, Earl W., Detroit
Janke, Robert A., Benton Harbor
Mason, Bruce H., Grosse Pointe Woods
Millar, L. Duane, Jr., Detroit
Sister M. John Baptist, Monroe
Schoendorf, Carl H., Grand Rapids

MISSISSIPPI

Laws, Henry L., Columbus
Laws, John D., Sr., Columbus

MISSOURI

Loomis, Charles W., Kansas City

NEBRASKA

Beer, Lowell, Beatrice

NEVADA

Powell, Louis, Reno

NEW JERSEY

McGeough, Hugh J., Bergenfield
Regulski, Francis J., Nixon

NEW YORK

Clarke, Arthur R., Geneva
Farber, Herman, New York City
Greene, Frank A., Suffern
Neuman, Edwin, Buffalo
Schisler, Evelyn, New York City
Signor, Harold C., Auburn

NORTH DAKOTA

McKechnie, William J., Bismarck

OHIO

Enright, John J., Urbana
McGowan, John V., Cuyahoga Falls

OKLAHOMA

Clagg, Roy E., Tulsa
McLemore, David, Oklahoma City
Wilson, Sam E., Oklahoma City

OREGON

Barge, Glenn K., Salem

PENNSYLVANIA

Carter, Phyllis J., West Chester
Franks, Arthur J., Butler
Huff, Warren M., Philadelphia
McCunn, Harold H., Pittsburgh
Rosenberg, Allen P., Philadelphia
Seidelman, Murray J., Philadelphia
Dix, Robert C., Nicholson
O'Reardon, John, Philadelphia
Turnoff, Sol S., Philadelphia

RHODE ISLAND

DuCharme, Edward N., Edgewood
Dussault, Maurice, Pawtucket

TEXAS

Green, Alice L., San Antonio
Holder, Robert L., Wichita Falls
Honig, Oscar E., Pasadena
Meyer, Imo K., Houston
Murray, W. W., Houston
Rayburn, James L., Houston
Ritzen, Horst R., Houston
Sherrill, Martha V., Pasadena
Sherrill, Wade H., Pasadena
Turner, T. Atlee, San Antonio

UTAH

Haymond, Paul M., Springville

VIRGINIA

Atwan, Cpl. Donald, Camp A. P. Hill

WASHINGTON

Kopet, Jerry, Spokane
Wasem, Weldon B., Clarkston

WISCONSIN

Roemer, William C., Kenosha

POSSESSIONS

Alexandrino de Murphy, Obdulia, Rio Piedras, P. R.

FOREIGN

Bowman, Kenneth A., Yukon Territory, Canada
Deffner, Michael, Athens, Greece
Hauer, Roberto H., Mexico, D. F.
Jirawongse, Vichiara A., Bangkok, Thailand
Zebes, Maria T., Panama City, Panama

Deceased Members

Chase, Walter M., Grosse Pointe Park, Mich., Aug. 25, 1955 (Life Member)
Epstein, George, Franklin Park, Ill., Sept. 5, 1955
Ilhardt, William K., Kirkwood, Mo., Aug. 1955 (Life Member)
Lichtenfeld, Julius, Brooklyn, N.Y., June 1955
Putt, Earl B., New York City, July 30, 1955 (Life Member)
White, Charles W., Dover, N.J., Aug 13, 1955

Obituaries

William K. Ilhardt of Kirkwood, Mo., passed away last August at the age of 87. Mr. Ilhardt knew pharmacy both as a retailer and as a hospital pharmacist and at one time was a member of the faculty of the St. Louis College of Pharmacy, where he also served as secretary on the Board of Trustees for more than 40 years. He was a life member of the A.PH.A., having joined in 1901.

George Epstein, Sr., manager of the Chicago branch of Abbott Laboratories, died September 5 in Chicago, Ill., at the age of 64. He had been a member of the A.PH.A. since 1944.

A-1 BOOSTER FOR YOUR B-COMPLEX SALES

COMBEX KAPSEALS®

for additional amounts of vitamin B-complex factors during periods of growth, pregnancy, lactation, and stress

COMBEX WITH VITAMIN C KAPSEALS

to combat deficiencies of factors of the B-complex and of vitamin C, as well as coexisting deficiencies of these vitamins.

THE COMBEX® LINE

TAKA-COMBEX® ELIXIR

for flexibility of dosage and convenient administration, especially in the young and in the elderly

COMBEX PARENTERAL

for replacement of B-complex reserves when the oral route is not feasible.

THERA-COMBEX® KAPSEALS

to provide factors of the vitamin B-complex and vitamin C in the high potencies needed for intensive vitamin therapy.

TAKA-COMBEX KAPSEALS

provide Taka-Diastase,® potent starch digestant, in addition to factors of the vitamin B-complex and vitamin C.

Give your B-complex sales an A-1 boost by keeping all six COMBEX products stocked.

PARKE, DAVIS & COMPANY DETROIT, MICHIGAN

A.PH.A. Council Meeting

THE COUNCIL of the AMERICAN PHARMACEUTICAL ASSOCIATION held a two-day meeting in Washington on October 13 and 14 and considered many matters of importance dealing with the internal and external affairs of the ASSOCIATION.

Much time was given on the first day to a consideration of the ASSOCIATION'S requirements for the physical expansion of its headquarters building and facilities.

The Executive Committee of the Council reported on recent efforts on the part of Federal government agencies to acquire property to the rear of the ASSOCIATION'S headquarters building and the possibility of cooperating with these agencies and private organizations interested in the use of this space for certain building purposes.

The Council voted to authorize Dr. H. A. B. Dunning and the Secretary of the A.PH.A. to proceed with a fund-raising program which would enable the ASSOCIATION to erect a utility annex to the present building, adding about 90,000 cubic feet of space for routine office and storage facilities. This would permit restoration of space now used for office purposes to the originally planned activities such as enlargement of museum and editorial facilities. It was estimated that in the neighborhood of $300,000 would be required for building and equipment to carry out this plan.

Several new Local Branches were reported to be in process of organization, and with the anticipated formation of a Student Branch at Creighton University, the task of establishing an A.PH.A. Branch in each accredited college of pharmacy is now practically completed. The Council also authorized the formation of a Local Branch in Havana, Cuba.

The suggestion to conduct district meetings of the A.PH.A. in connection with the A.A.C.P.-N.A.B.P. district meetings in the current ASSOCIATION year received a setback due to difficulties in rearranging programs already formulated. However, the Council authorized further exploration of this proposal with the district meeting officers and A.PH.A. Branches.

Distribution of A.PH.A. Pamphlet No. 101 dealing with suggested antidotes for accidental poisoning, as a separate professional service, was authorized and a price schedule was set for single copies of the pamphlet at 40 cents; lots of 10 at 30 cents per copy, lots of 100 or more at 22½ cents per copy, and lots of 1,000 or more at 15 cents per copy.

Formation of general and special committees for the Detroit convention was approved, and the Secretary was authorized to work out details with the Michigan Branch of the A.PH.A. and the Michigan State Pharmaceutical Association officers.

Considerable attention was given by the Council to the participation of the AMERICAN PHARMACEUTICAL ASSOCIATION in international pharmaceutical affairs. President Heinz reported in detail on the meeting of the Fédération Internationale Pharmaceutique which he and others had attended in London in September as Delegates from the AMERICAN PHARMACEUTICAL ASSOCIATION. His report was supplemented by accounts of this meeting from the co-chairmen of the Committee on International Relations, Mr. Newell W. Stewart and Mr. Don E. Francke, who had also attended the meeting. These reports united in recommendations to the Council to continue affiliation with the Federation, and also recommended that a threefold increase in dues to the Federation, which had been voted at the London meeting, be approved by the Council. The increased contribution is needed by the Federation to provide more clerical and office facilities for the Secretariat of the Federation.

The Council voted to accept the proposed increase in dues and to cooperate as fully as possible with the objectives of the Federation as long as they give full recognition to the continuation of the system of private enterprise in the development of pharmaceutical services.

In view of the fact that the representatives of the A.PH.A. who attended the meeting reported that it was not likely that a meeting of the Federation could be arranged in the United States in the foreseeable future, the Council voted to limit the 1957 meeting of the Fourth Pan-American Congress of Pharmacy in the United States to its original scope and not to plan to make it a world congress of pharmacy.

At the suggestion of President Heinz, the Council voted to approve increasing the membership of the A.PH.A. Committee on International Relations by the addition of four members. The additional members of the committee named by President Heinz are Colonel Bernard Aabel, Mrs. Thelma Morris Coburn, Pharmacist Director Thomas Foster of the Public Health Service, and Mr. Jack Cooper.

President Heinz and Secretary Fischelis were requested to present to the National Drug Trade Conference at its meeting on December 5 the plans of the AMERICAN PHARMACEUTICAL ASSOCIATION for the Fourth Pan-American Congress of Pharmacy to be held in Washington in 1957 and to enlist the cooperation of all national pharmaceutical associations holding membership in the Conference in the formation of an all industry and professional committee to sponsor the Congress. It was understood that Dr. Schaefer and Dr. Fischelis, who are members of the Executive Committee of the National Drug Trade Conference, would request the Executive Committee at its meeting on December 1 to list discussion of the Pan-American Congress on the agenda of the Conference on December 5.

The Council voted to reiterate the traditional policy of the AMERICAN PHARMACEUTICAL ASSOCIATION to the effect that public health and welfare demands that sale and distribution of all drugs and medicines should be carried on by or under the personal supervision of a registered pharmacist.

The Council elected the following to the Committee on National Formulary: John J. Dugan, to serve the unexpired term of A. R. Granito who had resigned (this term expires in 1958); Don M. Copley to succeed C. O. Lee for the term ending in 1959; E. A. Brecht (re-elected) for the term ending in 1959; and W. Arthur Purdum and Richard A. Deno for the term ending in 1960.

Dr. Linwood F. Tice was appointed to serve as a member of the Committee on the Iodine Educational Bureau, Inc., Award to fill the unexpired term of the late Dr. Leroy Edwards. This term expires in 1956.

Dr. L. W. Rowe and Dr. H. W. Youngken, Sr., were reappointed as members of the Committee on Pharmaceutical Research.

The Council gave considerable attention to some of the uncomplimentary references to the profession of pharmacy as a whole which had appeared in a number of articles by feature writers in lay magazines and newspapers in which isolated instances of violation of pharmacy laws and the Code of Ethics, especially with regard to "substitution" and over-the-counter sale of barbiturates, had been used as a basis for sensational headlines and exaggerated statements. It was felt from a careful analysis of such articles that the source material of these articles is usually the record of action taken by the Food and Drug Administration and publicized by that agency and frequently reiterated. The Council requested the Secretary to prepare a statement pointing out this fact and calling attention of the proper authorities to the harm that is being done to the profession as a whole by the constant reiteration of information on and exaggeration of such isolated cases.

The next meeting of the Council will take place February 2 and 3, 1956.

Diabetes Detection

ELSEWHERE in this issue and on the front cover we call attention to the importance of the American Diabetes Association's campaign for diabetes detection.

Pharmacists can play an active role in solving this health problem during Diabetes Week by assisting in the collection of urine specimens and in publicizing the test program. In many communities pharmacists have arranged to finance the Detection Test Program through distribution of "Dreypaks" and other necessary materials.

Progress in Poliomyelitis Vaccine Distribution

THE DEPARTMENT of Health, Education, and Welfare has announced broadening of priority age groups for Salk poliomyelitis vaccine effective immediately. Each state may now select the priority ages best suited to state needs, within a range from birth through 14 years of age. The new priority groups also include pregnant women if the states so desire.

Because vaccine supplies remain short of total demand, it is recommended that each state initially extend its priority groups to embrace no more than 5 additional years of age outside the present 5 through 9 priority. This is to enable the states to move in an orderly way into lower or higher age groups, wherever they find their poliomyelitis problems are greatest.

The flexible priority program was recommended unanimously by the National Advisory Committee on Poliomyelitis Vaccine, appointed last spring to advise the Secretary of Health, Education, and Welfare on vaccine distribution. The Surgeon General of the Public Health Service, Dr. Leonard A. Scheele, concurred in the recommendation.

The Secretary released the following statement:

"I have been advised by the Public Health Service that we are approaching fulfillment of the immediate demand for polio vaccine in the 5 through 9 age group in some states. The Public Health Service has released almost 24 million cubic centimeters, enough to give 2 injections to three-fourths of the nation's children in this group.

"Virtually all the states have now recommended a broadening of the priority group so that vaccinations may be extended to additional ages as the supply becomes available. It is important that we all cooperate to expedite prompt use of the vaccine, which expires 6 months after it is distributed by manufacturers.

"The National Advisory Committee reports that it is impossible to select a precise new national priority group which would meet the needs of each individual state. The public health service reports that the incidence of poliomyelitis among the different age groups varies among the states, especially outside the 5 through 9 group.

"Therefore, on the advice of the committee, we are recommending that the individual states set their own next priorities to channel the vaccine to their age groups most affected by poliomyelitis. As the supply of vaccine becomes greater, priority groups may be further extended by the states in future steps within the range of birth through 14 years.

"It is impossible to predict with any certainty the availability of vaccine supplies. On the basis of current output, however, the Public Health Service expects that if the states will concentrate on the next most susceptible groups—within the 5 additional years of age recommended—some protection by the beginning of the next poliomyelitis season will be provided.

"I urge the medical and pharmaceutical professions, health officials, parents and others to cooperate in completing vaccinations in the new priority groups as rapidly as supplies become available. We should not wait until the poliomyelitis season is imminent and try to crowd too many vaccinations into too short a time.

"The Public Health Service is continuing to receive very encouraging reports as to the safety and the effectiveness of the vaccine now being released for use."

Although the Federal priorities are not binding upon the states, they have been followed, with some exceptions, to meet local needs. State priorities are set by state health departments, assisted by advisory committees which have been established in most states.

Some states may utilize their 5 additional years of age by extending their priorities downward to include children from birth to age 10. Others may extend their priorities upward to include children 5 through 14. Or states may add additional years at both ends of the present priority so that their new group could be, for example, 3 to 11.

With the broadening of the priority group, the allocation of vaccine among the states will be based on their need for vaccine to complete the vaccination of children under 15 and pregnant women.

There are approximately 32,461,000 children under 5 and in the 10 through 14 year bracket. Estimates indicate that approximately 4 million women become pregnant annually. Incidence of poliomyelitis among pregnant women is about the same as among

(Continued on page 633)

An Improved Technique for Preparing Glycerin Suppositories U.S.P.

To improve the firmness and clarity of the product, Dean Tice and Professor Ehrenstein of the Philadelphia College of Pharmacy and Science evolved a new formula and technique based on higher sodium stearate content, higher solution temperature and the use of heated metal molds. Except for a minor modification, this is the formula adopted in U.S.P. XV.

Elsa Ehrenstein *and* **Linwood F. Tice**

Glycerin suppositories have been official in the U.S.P. since 1890. At that time the suppositories were prepared by chemical reaction between sodium carbonate and stearic acid in glycerin with some water added to aid solubility. This process proved to be rather tedious, impractical and time-consuming. Prout (1) suggested solution of sodium stearate in hot glycerin with the addition of water. His formula was accepted for U.S.P. XI and continued to be official through subsequent revisions. It was still the official method of U.S.P. XIV. The procedure is simple and consists of heating the glycerin on a water bath to about 95°C. and adding the sodium stearate with gentle stirring until it is completely dissolved. The specified temperature is maintained until solution is accomplished. After adding a small amount of water, the hot mixture is immediately poured into molds and allowed to solidify.

Investigation's Aim

A few years ago it was observed that glycerin suppositories prepared according to the official formula seemed too soft and flexible. Numerous batches, prepared under identical conditions and using different samples of commercially available sodium stearate, gave the same results. The suppositories were soft, flexible, and also slightly opaque. However, it was observed that the residue remaining in the casserole after pouring seemed to be much firmer after a time than the suppositories themselves. No particular significance was attached to this fact.

The object of this investigation was an attempt to find a method to produce firm and transparent suppositories according to a formula that would not materially change the monograph in the U.S.P. XIV, yet be practicable for small scale use.

The first approach was to raise the solution temperature above 100°C. The U.S.P. specifies a water bath, but there is always a possibility of condensation and only very careful manipulation eliminates this hazard. Also, solution is rather slow at 95° and time increases the danger of condensation. The water bath was replaced with a glycerin bath. At 115° the sodium stearate was added carefully, maintaining the temperature between 115°–120° and gently stirring the mixture to prevent the formation of a film. Solution was more rapid than at the lower temperature and the possibility of condensation was eliminated. Other than the solution temperature used, the official directions of U.S.P. XIV were employed. The resulting suppositories were still soft and flexible, but the process was completed in a shorter time.

The second modification was to omit the water specified in the official formula. This omission did not materially alter the consistency of the suppositories.

The third approach was to increase the amount of sodium stearate employed. Sodium stearate at a level of 9% was dissolved in glycerin at a temperature of 115°–120°. Solution was again more rapid than at the lower temperature, but greater care had to be exercised in order to avoid foaming. The hot mixture was poured immediately into molds and the suppositories were allowed to cool completely. They were firmer than those containing only 8% sodium stearate but, again, the residue in the casserole was firmer and seemed to be far better than the suppositories themselves.

Two possible explanations for this behavior seemed most likely: one, based on a difference in heat transfer which controls the rate of cooling and, two, on the orientation of the sodium stearate molecules toward the metal surface of the mold by reason of the dipole structure of the sodium stearate—such orientation interfering

with the formation of the soap gel. With these theories in mind, stainless steel, aluminum, chromium-plated, and plastic molds were used.

All previous experiments were repeated utilizing these four molds. There was no difference in the three metal molds, but the suppositories solidified in the plastic mold showed appreciably greater firmness. A plastic mold has low heat conductivity and transfer which makes it poor for the preparation of suppositories with theobroma oil as the base, but for glycerin suppositories this seems to be advantageous. Since there was no difference in the three metal molds, all subsequent experiments were carried out with the chromium-plated mold and the plastic mold.

The following formulas, insofar as ingredients were concerned, were then used: U.S.P. XIV; eight per cent sodium stearate in glycerin; and nine per cent sodium stearate in glycerin.

A glycerin bath was used in each case and the sodium stearate was dissolved at 115°. The resulting hot solutions were poured into a metal mold and plastic mold, respectively. The conditions of pouring were changed as follows:

Hot solutions were poured into metal and plastic molds which were kept at room temperature (32°).

Hot solutions were poured into metal and plastic molds which were kept in a refrigerator (5°) prior to pouring.

Hot solutions were poured into a metal mold which was preheated for at least one hour in a hot air oven at 80°.

Hot solutions were allowed to cool spontaneously at room temperature and then poured just before solidification.

A formula containing 9% sodium stearate dissolved at 115° and poured into a preheated metal mold gave the best results. The suppositories were quite firm and clear. The same formula, when poured into a plastic mold, was almost as satisfactory but the suppositories were not quite as clear.

From these experiments, the following conclusions were drawn:

- The solution temperature should be increased to 115°–120°, leaving the choice of a suitable bath to the operator.
- The percentage of sodium stearate should be increased from 8 to 9%.
- The water which is called for in the present official formula may be omitted.
- The hot solution of sodium stearate in glycerin should be poured either into a plastic mold kept at room temperature or, better still, into a metal mold previously heated to 80° for at least one hour.

On the basis of these experiments, the following monograph was suggested for consideration in U.S.P. XV:

Glycerin Suppositories

Glycerin	91 Gm.
Sodium stearate	9 Gm.

Heat the glycerin in a beaker or a casserole, in a suitable bath, to about 115°–120°; add the sodium stearate and stir the mixture gently with a glass rod, maintaining the specified temperature until the sodium stearate is dissolved. Pour the hot mixture into metal molds previously heated in an oven and allow the suppositories to cool completely before removal.

In studying this proposed formula, attention was drawn by interested persons to the fact that some few manufacturers still use the old method based upon the reaction of stearic acid and sodium carbonate or other alkali. Since these manufacturers believe the addition of a small amount of water essential for this process, the Revision Committee decided to include about 5 per cent of water in the formula. The formula and directions finally adopted for U.S.P. XV are as follows:

Glycerin Suppositories, U.S.P. XV

Glycerin	91 Gm.
Sodium stearate	9 Gm.
Purified water	5 Gm.

Heat the glycerin in a porcelain or other suitable container on a suitable bath to about 115°–120°. Add the sodium stearate and stir the mixture gently with a glass rod, maintaining the specified temperature until the sodium stearate is dissolved. Then add the purified water, mix thoroughly, and immediately pour the hot mixture into a suitable mold, and allow the suppositories to cool completely before removal. If a metal mold is used, heat it in an oven and pour the hot mixture into the hot mold.

Discussion

It is not clear whether some change in the nature of sodium stearate U.S.P. in the last few years is the cause of reported difficulties in making satisfactory glycerin suppositories by the U.S.P. XIV method. Dr. Joseph Rosin of Merck & Company, Inc., in discussing (2) this possibility with the authors, pointed out that considerable stearic acid is now produced from the glycerides of "hardened" vegetable oils and

(Continued on page 630)

Dean Foss and Jonah Jaffe of the University of Maryland discuss a quick, convenient method of preparing white lotion from previously packaged, preweighed, powdered ingredients

Extemporaneous Preparation of White Lotion

By

Jonah J. Jaffe and Noel E. Foss

Lotio alba or white lotion, prescribed in the treatment of acne vulgaris, has been popular from 1870 (1, 3). An official product prepared from zinc sulfate and sulfurated potash, lotio alba is limited to use only when freshly prepared (2).

The lotion is prepared by separately dissolving 40 Gm. each of zinc sulfate and sulfurated potash in 450 cc. distilled water. After filtering each solution, the sulfurated potash is slowly added to the zinc sulfate solution with constant stirring. The mixture is then diluted to 1,000 cc. with distilled water and thoroughly mixed. The mixture of insoluble zinc sulfide and free colloidal sulfur gives it a creamy white appearance. The flocculent precipitate settles upon standing and tends to become lumpy (4).

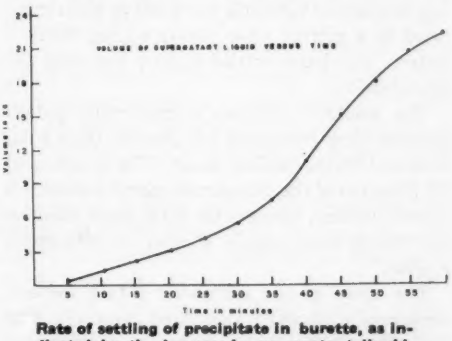
Sulfurated potash is highly unstable and may be formed by fusing sublimed sulfur with potassium carbonate. Liver-brown when freshly prepared, it rapidly turns greenish yellow upon exposure to air. Its aqueous solutions deposit insoluble matter upon standing, which is to be removed to prevent irritation to the skin (3).

Facilitating the preparation of white lotion with freshly prepared or stabilized sulfurated potash would add to its advantages as a drug of choice in dermatological practice. In the course of the following experiments various methods were employed in an attempt to aid the pharmacist in the preparation of a fresh white lotion and to assure the prescriber of the stability of the active ingredients used.

Experimental

White lotion was reduced to the powdered form in an attempt to obtain a preparation which could be easily reconstituted upon the addition of distilled water. The lotion was filtered through retentive filter paper with the aid of suction, and the residue was dried in a hot air drying oven.

Upon reconstitution with distilled water, a lotion was obtained which was gray to tan in color, adhered to the sides of the flask very poorly, and contained coarse and granular suspended material which settled very rapidly. To determine the settling rate, the lotion was placed in a 50-cc. burette, with the drop in level of the pre-



Rate of settling of precipitate in burette, as indicated by the increase in supernatant liquid.

cipitate being recorded at 1-minute intervals. The lotion which was filtered and rehydrated without oven drying settled at the rate shown in the graph.

White lotion was then lyophilized using the shell method and then rehydrated with distilled water. A gray lotion with gritty and coarse particles which settled rapidly was obtained. The lyophilized lotion settled at a rate of 16.7 cc. per 5-minute interval. The official lotion settled at a rate of 0.36 cc. per 5-minute interval.

An attempt was then made to obtain sulfurated potash in powdered form, free from insoluble residue, to facilitate and expedite the preparation of the lotion. Conventional distillation of sulfurated potash solution, or drying in a vacuum drier, resulted in loss of hydrogen sulfide gas and the appearance of a yellow crystalline-like material which was insoluble upon rehydration.

Lyophilization of sulfurated potash solution resulted in a yellow-orange friable powder, not completely soluble upon rehydration. The resulting mixture was bright orange as compared to the official solution, which is light brown (2).

The formation of white lotion from powdered ingredients free of insoluble residue was then considered. When potassium hydroxide and sublimed sulfur are boiled in 20% alcohol, sulfurated potash solution is formed. Powdered potassium hydroxide and sublimed sulfur were placed in a tight container. Zinc sulfate was placed in another container. The contents of the first container were boiled for 3 minutes in 20% alcohol until the sulfur dissolved. The solution was diluted and the zinc sulfate was added. Agitation produced a white lotion which compared very favorably with the official lotion. A white lotion with good adhering properties and containing fine particles settled at a rate of 0.21 cc. per 5-minute interval. Boiling a combination of potassium hydroxide, sublimed sulfur and zinc sulfate failed to produce white lotion.

Freshly fused sulfurated potash and zinc sulfate produced a favorable white lotion when triturated in a mortar while slowly adding distilled water. This lotion settled slightly less than the official lotion.

The insoluble residues in sulfurated potash samples were compared by filtering their solutions and drying the filter paper. The papers used for filtration of the commercial samples showed a definite residue, whereas the filter paper used for the freshly fused sample showed no perceptible residue.

The assay of the sulfurated potash (extemporaneously prepared) compared favorably with the official sulfurated potash. A comparative study of the constituents of sulfurated potash was made on two commercial samples and the freshly fused sample. Freshly fused sulfurated potash showed an average of 1.7% of potassium sulfate sulfur, while the commercial samples showed a range of 1.73 to 2.1%. The freshly fused sample showed 10.2% of thiosulfate sulfur, whereas commercial samples showed 12 to 12.5%. All samples showed from 31.9 to 35% of sulfide sulfur.

Discussion

A residue-free sulfurated potash, in preweighed stable amounts, removes the time-consuming steps of weighing and filtering. If freshly fused sulfurated potash were preweighed in small fragments and packaged in tight containers, such as pouches of plastic laminated aluminum, we would be assured of a stable sulfurated potash and of a therapeutically active white lotion.

A recent addition to the various products on the commercial market, Pronac (E. Fougera & Company), has the limitation of poor suspending properties. Although inert binders are present and the lotion is quickly and easily prepared, it settles about 19 times as fast as the official lotion.

The 3-minute boiling procedure offers the pharmacist a rapid means of preparing a fresh white lotion. The sulfur should be completely wetted to assure an acid *p*H.

Upon standing, sulfurated potash solution turns colorless with an increase in the concentration of the thiosulfate present.

REFERENCES

(1) Crow, F. W., and Curtis, H. C., "Current Therapy," W. B. Saunders Company, Philadelphia, 1954, p. 573.
(2) The National Formulary, 9th ed., Mack Publishing Company, Easton, Pa., 1950, p. 568.
(3) Raubenheimer, O., *J. Am. Pharm. Assoc.*, **3**, 692 (1914).
(4) Rogers, C. H., Soine, T. O., and Wilson, C. O., "A Textbook of Inorganic Pharmaceutical Chemistry," 5th ed., Lea and Febiger, Philadelphia, 1952, p. 331.

Measuring Nerve Gas Exposure

A rapid test for cholinesterase, chemically related to acetylcholinesterase, an enzyme involved in the transmission of nerve impulses between cells, was described by W. T. Caraway at the 127th national meeting of the A.C.S. at Cincinnati, March 31, 1955. Poisons that inhibit the nerve cell enzyme also inhibit the cholinesterase in the blood serum; therefore the measurement of one is related to the effect upon the other enzyme.

STABILITY OF EMULSIONS Prepared with Hard and Distilled Water

By Robert Marchisotto, Professors John E. Christian *and* Glen J. Sperandio of Purdue University School of Pharmacy

In the formulation of pharmaceutical and cosmetic emulsions distilled water is often indicated, and from this one might deduce that tap or hard water is not satisfactory in these preparations because of its effect on emulsion stability. No published data verifying a deduction of this kind were available before the authors began this study.

This paper reports the results of a study on the relative stability of an emulsion formula prepared with hard water and distilled water, and the evaluation of the effectiveness of a chelating agent (1) in overcoming the ionic effects of hard water on the emulsion. The stability of the emulsion was evaluated by correlating visual observations of phase separation and color change on the gross sample with changes in the mean volume and standard deviation of the particles in the sample.

A series of emulsions was prepared using the following basic formula:

Oleic acid, U.S.P.	16.8
Liquid petrolatum, U.S.P.	50.0
Glycerin, U.S.P.	25.0
Triethanolamine, U.S.P.	8.2
Water, *q.s.*	250.0

The emulsions were made by mixing the oleic acid, triethanolamine and liquid petrolatum with stirring until all of the soap formed was dispersed throughout the mixture. The glycerin was mixed with the water, and this solution was added to the liquid petrolatum–triethanolamine oleate dispersion and stirred for ten minutes with a power-stir mixer at a constant rheostat setting. In the course of preparing the emulsions, factors which could affect comparison on a relative basis were controlled. These factors were: speed and time of mixing, size of sample prepared, type of mixer, type and size of blade, size and shape of mixing container, and size and shape of storage containers.

Triethanolamine oleate was selected as the emulsifier since soaps tend to be more susceptible to the effects of calcium and magnesium ions commonly found in hard water than other types of emulsifiers. Triethanolamine soaps are also susceptible to oxidative color changes which can serve as an indication of instability (2). Although this study was concerned primarily with the physical stability of the emulsions, it was recognized that the chemical stability of the emulsifiers and oils was equally important, and this property was also noted if present. Glycerin was included in the formula because it is a common ingredient in many pharmaceutical and cosmetic emulsions.

Seven emulsions were prepared from the basic formula, differing only in the quantity and degree of hardness of the water used, and in certain instances a chelating agent, disodium salt of ethylenediaminetetraacetic acid (EDTA)*, was added. The emulsions were prepared with: (A) distilled water; (B) hard water, 374 p.p.m. $CaCO_3$ and disodium EDTA in stoichiometric quantities; (C) hard water, 50 p.p.m. $CaCO_3$; (D) hard water, 100 p.p.m. $CaCO_3$; (E) hard water, 200 p.p.m. $CaCO_3$; (F) hard water, 374 p.p.m. $CaCO_3$; (G) hard water, 500 p.p.m. $CaCO_3$.

The hard water used in these studies was collected from the tap and analyzed for total hardness and magnesium hardness separately, using a modification of the Schwarzenbach method introduced by Walker and Robertson (3). The average total hardness of the sample was 374 p.p.m. $CaCO_3$ and the average magnesium hardness was 152 p.p.m. $CaCO_3$. The calcium hardness, by difference, was 222 p.p.m. $CaCO_3$. The water samples of varying degrees of hardness were prepared by diluting the analyzed sample to the desired concentration for values below 374 p.p.m. $CaCO_3$ and by adding the proper amount of $MgCl_2 \cdot 6H_2O$ and $CaCl_2$ for 500 p.p.m. concentration.

Gross Observations. All of the emulsions were stored at room temperature (R.T.), 4° C., and 45° C. and were observed at regular intervals of 1, 4, 7, 31, and 84 days later to ascertain any change in their physical and chemical states.

* Sequestrene NA 2—Alrose Chem. Co., Providence, R.I.

Specifically, changes in color, phase separation, and phase stability were the characteristics most closely observed. In this respect, emulsion A, containing the distilled water, was slightly more stable than emulsion B, containing stoichiometric amounts of disodium EDTA and hard water. Both of these emulsions were far more stable than emulsions C, D, E, F, and G containing water of varying degrees of hardness. Emulsion G, made with the hardest water, was the least stable.

Microscopic Observations. Since an emulsion is essentially a thermodynamically unstable system and the particle size is progressively increasing (4), it should be possible to detect the change by means of a size-frequency analysis (5), as a function of the change in the mean diameter of the dispersed particles. Harkins and Beeman have described such a method, and the method used in this study is basically the same. However, instead of projecting microscopic images of the emulsion particles onto a screen to be measured, the particle diameters were measured by direct microscopic observation using a calibrated eyepiece.

The change in mean particle volume was used as the criterion of stability since it is considered more significant than the change in mean particle diameter (7). In order to compute the mean particle volume the ungrouped data obtained above were arranged into statistically grouped data, that is, into classes of a frequency distribution with the class mark serving to characterize the theoretical mean diameter of the class. The class interval was approximately two microns in range with the class boundaries ranging from 0–2, 2–4, 4–6, etc., microns, and their corresponding class marks (diameters) 1, 3, 5, etc., microns. Using the formula $V = \pi d^3/6$, where d is the diameter (class mark), V, the class volume was determined. From this the mean particle volume and standard deviation of the mean particle volume were determined using formulas given by Mode (8). Table I illustrates this procedure using determination No. 1 of emulsion A.

Table I—Volume–Frequency Distribution of 1,000 Particles of Emulsion A

Class Boundary in μ	Class Mark (d) in μ	Class Volume (V)[a] in μ^3	Frequency (f)
0–2	1	0.52	558
2–4	3	14.14	225
4–6	5	65.45	83
6–8	7	179.59	34
8–10	9	381.70	34
10–12	11	696.91	14
12–14	13	1150.35	10
14–16	15	1767.15	10
16–18	17	2572.45	2
18–20	19	3591.37	9
20–22	21	4849.06	5
22–24	23	6370.64	4
24–26	25	8181.25	2
26–28	27	10,306.02	3
28–30	29	12,770.08	...
30–32	31	15,598.57	2
32–34	33	18,816.61	1
34–36	35	22,449.35	...
36–38	37	26,521.91	3
38–40	39	31,059.43	...
90–92	91	394,569.78	1
Total No. of Particles, N			1,000
Mean Particle Volume,[b] $\bar{V}$, in μ^3 = 725			
Standard Deviation,[c] s_V, in μ^3 = 12,600			

[a] $V = \pi d^3/6$ [b] $\bar{V} = \sum fV/N$

[c] $s_V = \sqrt{\frac{1}{N}\sum fV^2 - (\bar{V})^2}$

In Table II the mean particle volume, $\bar{V}$, and the standard deviation, s_V, in cubic microns are listed for emulsions A – G at R.T. at given intervals of time.

According to Herdan in his book on small particle statistics (9), increased particle size accom-

Table II—Mean Particle Volumes and Standard Deviations in μ^3 for Samples of Emulsions A – G at R.T. at Given Time Intervals

	Number of Days Later									
	1		4		7		31		84	
Emulsion	$\bar{V}$	s_V	$\bar{V}$	s_V	$\bar{V}$	s_V	$\bar{V}$	s_V	$\bar{V}$	s_V
A	725	12,611	101	558	110	1,049	96	574	159	1,495
B	201	1,551	82	361	188	1,422	39	181	98	700
C	1,432	18,499	...	...	3,752	62,179	Separated[d]		Separated	
D	633	5,190	287	1,925	3,154	59,179	2,273	66,537	Separated	
E	48	282	318	6,534	350	4,762	15,404	478,854	Separated	
F	1,991	35,755	806	8,002	1,695	23,595	610	10,882	Separated	
G	Separated		Separated		Separated		Separated		Separated	

[d] Upon dilution large globules of oil formed which could not be dispersed to be counted.

panies the aging of an emulsion, and the relationship between average particle size and time and standard deviation and time appears to be linear.

The size-frequency analysis correlates very well with the results obtained by microscopic observation of the emulsions for changes in stability. Emulsion B, containing the chelating agent, appears to be more stable than emulsion A when compared by size-frequency methods but less stable when compared by gross observation. Since factors such as color change were also noted in the latter method this may account for slight differences in the order of stability encountered by the use of the two methods.

Graphed data showed a decided dip in some of the curves from 1 day to 4 days later. Since this is more pronounced in the hard water samples, it may be a question of a lag in time before equilibrium is established at the emulsion interface between the monovalent soap emulsifier and the Ca^{++} and Mg^{++} ions antagonistic to o/w emulsification. Robinson (10) states that Fischer and Harkins have observed that particles first increase in size but eventually reach a stable size distribution. This occurs when a condensed monomolecular film forms on the oil particle.

Summary

- Relative instability of emulsions prepared with a monovalent soap-type emulsifier and water of varying degrees of hardness was demonstrated when studied by correlated macroscopic and microscopic methods.
- An emulsion made with distilled water was the most stable; an emulsion containing hard water, 500 p.p.m. $CaCO_3$, was the least stable.
- The chelating agent disodium ethylenediaminetetraacetic acid aided in the stabilization of an emulsion containing hard water, 374 p.p.m. $CaCO_3$, with the chelating agent in stoichiometric amounts.
- The value of the application of size-frequency analysis to the scientific evaluation of emulsion stability was again demonstrated.

REFERENCES

(1) Martell, A. E., and Calvin, M., "Chemistry of the Metal Chelate Compounds," Prentice-Hall, Inc., New York, 1952, p. 4.
(2) "Emulsions and Detergents," 8th ed., Carbide and Carbon Chemical Corp., New York, 1949, p. 7.
(3) Walker, A. O., and Robertson, R. S., *Power Generation*, **54**, 81(1950).
(4) King, A., *Trans. Faraday Soc.*, **37**, 168(1941).
(5) Clayton, W., "The Theory of Emulsions and Their Technical Treatment," 4th ed., The Blakiston Co., Philadelphia, 1943, p. 182.
(6) Harkins, W. D., and Beeman, N., *J. Am. Chem. Soc.*, **51**, 1674(1929).
(7) Clayton, W., *op. cit.*, p. 471.
(8) Mode, E. B., "Elements of Statistics," 2nd ed., Prentice-Hall, Inc., New York, 1951, p. 89.
(9) Herdan, G., "Small Particle Statistics," Elsevier Publishing Company, New York, 1953, p. 331.
(10) Robinson, C., *Trans. Faraday Soc.*, **32**, 1424(1936).

Major Austin Appointed Consultant to Surgeon General

Pharmacist Named First Full Time Pharmacy Advisor to the Army's Surgeon General Silas Hays

Major William L. Austin, assistant professor of military science and tactics at Ohio State University, has been appointed the first full time consultant in pharmacy to the Army Surgeon General.

Major Wm. L. Austin

Born in Wallington, N.J., in 1915, he was 10 years of age when his family moved to East Rutherford, N.J., where he attended grade and high schools. Subsequently he received 3 degrees from the University of Michigan: B.S. in chemistry, 1936; M.A. in education, 1938; and a B.S. in pharmacy, 1941. The last was earned while he was an instructor at Michigan. Northwestern University conferred the degree of master of hospital administration on him in 1950. In 1954 he completed the advanced course at the Army Medical Field Service School.

Entering the Army as an enlisted man in 1942, he graduated in September of 1943 from Officers Candidate School and was commissioned a second lieutenant.

In addition to his service at Ohio State, 1954–55, Major Austin has served as administrative officer at the Birmingham Army General Hospital, Van Nuys, Calif., 1943–46; as executive officer of the 172d Station Hospital, Sendai, Japan, 1947–49; and as management officer at the Brooke Army Hospital, Fort Sam Houston, Tex., 1950–53.

He is a member of the AMERICAN PHARMACEUTICAL ASSOCIATION, the American Hospital Association, and the American College of Hospital Administrators.

Married to the former Lili Pollak of Perth Amboy, N.J., the Austins reside with their 2 sons, Lee Scott and Barry, at 361 Kennedy Street, Alexandria, Va.

Behring-Werke at Marburg, Germany, have developed a polio vaccine along Salk's principles "the immunizing effect of which has been increased by addition of aluminum hydroxide." More than 800 Marburg children have been vaccinated. Mass production of the vaccine is under way.

VITAMINS
Properly Classified

by F. Royce Franzoni, Past President
D. C. Pharmaceutical Association

THIS REPORT of D. C. pharmacists' efforts to obtain proper definition of vitamins for tax purposes was commented on editorially in the August 1955 issue of THIS JOURNAL, page 474.

A CLEAR-CUT VICTORY was won by a group of local pharmacists when District of Columbia Tax Court Judge Jo V. Morgan ruled on July 28 that vitamin and mineral preparations were not "foods" and were therefore not subject to the 1 per cent tax placed upon foods by the District of Columbia Sales Tax Act. The decision is expected to have impact upon similar situations nationally because of the District of Columbia's unique governmental and political position as the Nation's capital and the tendency of other jurisdictions to "look to Washington" for guidance. Although Judge Morgan's opinion was based primarily upon the text of the District of Columbia Sales Tax Act and the regulations issued thereunder, some of the comments are broad enough to have general application in the long-time controversy as to whether vitamins are foods or drugs.

Although the amounts of tax money involved were relatively small when compared to the overall annual budget of the District of Columbia (which exceeds $100 million), there were several basic principles involved which have bearing upon the public health, the cost of medical care, and the practice of medicine and pharmacy. To understand better all that was involved a summary of events might be in order:

In July of 1954, following Congressional amendment of the District of Columbia Sales Tax Act to include foods as taxable commodities and publication of the Commissioners' Regulations under the Act, the District of Columbia Tax Assessor published a ruling effective August 1, 1954 that "vitamins and minerals in liquid, powdered, granular, tablet, capsule, lozenge or pill form...are food or a food supplement... except when sold on the written prescription of a physician...and are subject to the District Sales Tax at a rate of 1 per cent." This ruling was formally protested to the Commissioners by the District of Columbia Pharmaceutical Association, prior to its effective date; but since the Tax Assessor had found one nutritional expert and one Government-employed pharmacist to confirm his opinion, the Commissioners sustained the Tax Assessor administratively, in spite of the Act's specific exemption from tax of "medicines, pharmaceuticals and drugs" whether sold on prescription or not.

In the face of this arbitrary ruling and the failure of the Commissioners to set it aside, 15 independent and chain drug stores (all members of the District of Columbia Pharmaceutical Association) engaged legal counsel and, upon advice of counsel, refused to charge and collect the tax during the period following August 20, 1954. For several months these pharmacists (the number eventually dropped to 11) faithfully reported all sales of vitamins and minerals and noted the cash value of the sales on their tax returns. They were then assessed the amount of the taxes and interest by the Tax Assessor; and they later paid assessments and penalties, under protest, when threatened with legal prosecution for failure to collect and pay. Following these efforts by the Assessor, the pharmacists then collected these taxes, paid the tax monthly (under protest) and filed suit in the District of Columbia Tax Court to recover these illegal assessments.

Judge Morgan heard the case in May 1955. The following expert witnesses appeared on behalf of the pharmacists: Drs. Preston A. McLendon and William P. Herbst of the Medical Society of the District of Columbia; Dr. Lloyd Miller, of the U.S.P. Revision Committee; and Dr. Theodore G. Klumpp, nationally known

medical advisor and consultant. All of these witnesses testified that vitamins (and minerals) are drugs when extracted and used for therapeutic purposes; and all pointed out the role of vitamins and minerals in preventive medicine, pediatric and geriatric medicine, and in maintenance of good general health. Witnesses for the District of Columbia government included a nutritionist and two biochemists, who said that vitamins are foods but who admitted using the term in a broad nutritional sense. The decision by Judge Morgan will allow the pharmacists to recover the taxes paid under protest where their records will substantiate the amounts paid as taxes on vitamins.

Editorially, there are several morals and lessons to be drawn from this decision and the events which preceded it:

• There is an increasing tendency on the part of lay administrators to make decisions which affect the public health and welfare without proper consultation with qualified professional persons and agencies. Although the services and opinions of the District of Columbia Health Department, the Commission on Licensure to Practice the Healing Arts, the Board of Pharmacy and other public health groups were available, the Tax Assessor bypassed these experts and went outside to get opinions which would support his ruling.

• Arbitrary (and often illegal) rulings and regulations frequently remain effective for lack of prompt and strong contest at the time they are initiated.

• Action against arbitrary rules and regulations is most effective when joint or combined rather than individual efforts are utilized. The action of the District of Columbia Pharmaceutical Association, ably assisted by members of the medical profession and officers of the Medical Society of the District of Columbia, demonstrated the illegality of the Tax Assessor's ruling. An individual protest would probably have gotten nowhere and the ruling would have remained effective by default and lack of contest.

• Characterization of one of medicine's vital weapons against disease as "foods" (even though only for tax purposes) would have tended to destroy in the minds of some people confidence in the physician and the therapeutic agents he dispenses or orders.

• The re-definition of vitamins and minerals as "foods," if allowed to stand, might easily have set aside normal schemes of dispensing and distribution of essential medical and health necessities and invited misuse and/or overmedication.

• By prompt and effective protest and action the ever-increasing cost of medical care and medicines was not boosted by an illegally applied tax.

Effect of Nerve Gases

If war comes, the average person who has learned such unfamiliar terms as neutron and nuclear fission, thanks to the A and H bombs, may be just as much interested in learning names like isopropyl methyl phosphonofluoridate and dimethylamide ethoxyl phosphoryl cyanide. These are the chemical names for two nerve gases. The former has the short name, "sarin"; the latter has been named "tabun."

Drs. Stephen Krop and A. M. Kunkel, civilian scientists with the Army Chemical Corps, reporting on work done on these nerve gases show how they are related to another well-known anticholinesterase chemical, DFP, short for di-isopropyl fluorophosphate, which has been used medically for some years to treat the eye disease, glaucoma, and the muscle weakness disease, myasthenia gravis. Like the two nerve gases, DFP stops the action of an important body chemical, the enzyme cholinesterase, that is essential to the nerves performing their function.

If a high concentration is breathed for a few seconds, death occurs. Exposure even to traces of their vapors causes marked constriction of the pupils of the eyes. The bronchial tubes become constricted, there is sudden difficulty in breathing, accompanied by coughing, shortness of breath, and watery discharge from the nose.

New Filters Protect from "Nerve Gas" Insecticide

Three new filter materials for gas masks and respirators have been found effective against the insecticide *demeton*, an offspring of the nerve gases formerly considered too dangerous for widespread farm use.

The new filters are the first to offer farmers complete protection against all commonly used insecticides, the Department of Agriculture reports.

The filter materials are: a special grade of fine-fiber asbestos, a fine-fiber wood pulp, and glass wool impregnated with a special resin. All three are now available commercially.

The Changing Aspects in Pharmaceutical Practice— *Viewed Internationally*

Dr. Viktor Hauser

Using the F.I.P. as a forum, President Viktor Hauser of the Austrian Pharmaceutical Association brought to the attention of the assembled delegates from 41 foreign countries the professional and economic plight of the general practitioner of pharmacy. He called attention to the significant changes in the production and distribution of modern drugs and the growth of sickness insurance programs in many countries as a basis for the changing character of the services demanded of pharmacists and the importance of adjustment on the part of the profession to meet the changing order in a manner to assure professional survival.

Tempora mutantur et nos mutamur in illis. At the present moment this Latin quotation has a special significance for our profession. Those times when the apothecary shop was regarded with respect as the traditional home of scientific research, those times when the pharmacist was able to devote himself exclusively, assured of his own position, to his vocational and scientific work have gone forever in most countries.

The rise of the pharmaceutical industry and its great importance, together with the consequent flooding of pharmacies with proprietary medicines, have brought about one of the most significant fundamental changes that our profession has ever been called on to face. The real work of the pharmacist, dispensing, has been forced into the background, just like his laboratory work. Here, too, 20th century mass production methods and rationalization have made enormous strides and the pharmacist is confronted with a situation demanding most urgent attention.

The social advances of the 20th century, the opportunities available for insuring the population, and the closely allied ideological problems which have followed different courses in the individual countries and are the center of the struggle in world politics, all exert considerable influence on the position of the pharmacist.

Sickness benefit societies, which are becoming powerful forces in all countries, have had a marked effect on the sale of medicaments at the pharmacy since they are endeavoring to cut costs to a minimum and simplify distribution. This tendency adversely affects not only the pharmacist's margin of profit but also his proper sphere of activity, namely dispensing and scientific research, since in his dealings with such societies he finds himself burdened with an unlimited amount of book-work and form-filling.

Legal and Economic Burdens

In every country today there is a noticeable tendency to place legal burdens on the shoulders of the pharmacist as a member of a profession concerned with the health of the people and on his shop as a sanitary institution. There is no profession which is called upon to bear a comparable burden, and yet the pharmacist receives no corresponding reward for it. On the contrary, it is the recognized practice on all sides to take something away from him: his margin of profit is cut, the bureaucratic burdens are increased and the retention of his market is endangered by the endeavors of other professions to encroach thereon The professional work of the pharmacist is reduced still further, since he just has not time enough to carry out the other bureaucratic and legislative work.

Quo vadis, pharmacia? Never has this question been asked with more poignancy than now when we are assembled here from all parts of the world, when we are striving in our discussions to decide what would be best for all the members of our profession throughout the world. The economic position of the pharmacist is in danger in every part of the globe. It may well be that

* Delivered at the General Assembly of the Fédération Internationale Pharmaceutique, London, Sept. 23, 1955.

here and there in one country or another the danger is not yet fully realized. But even so, the problems which I have just touched upon briefly will have to be faced sooner or later, while in other countries the position is already so serious that rapid aid is of vital need. If the Fédération Internationale Pharmaceutique wants to be a worldwide organization of pharmacists and realize its aims it must give its strictest attention to these developments and encourage the interchange of ideas and experience, laying down a well-defined policy so that help can be given to those national organizations and their members whose existence seems to be threatened today. One of the F.I.P.'s most urgent tasks is to set up an Economic Committee—a measure which I have advocated again and again—which must get to work quickly and efficiently.

I was very glad to see that my proposals in this matter fell on fruitful soil at the last session of the Council in Brussels. Our esteemed President, Sir Hugh Linstead, then entrusted me with the task of preparing a report for today's general meeting on the economic positions of pharmacists in those countries which are members of the F.I.P.

The Impact of Sickness Insurance

At the meeting of the Council in Brussels, the Sickness Benefit Society Committee already set up inVienna under the chairmanship of President Tramasure was enlarged by the inclusion of a few additional members and was transformed into a committee for dealing with economic questions and a committee for general pharmacutical practice.

The actual report, the history and development of which I have just noted, is based on answers and detailed information received from the various countries. Even the selection of subject shows a wide divergence of views. The following are some of the subjects proposed: the influence of sickness benefit societies on the development of pharmacy. The effect of national welfare institutions; the question of proprietary medicines and the possibility of persuading manufacturers of proprietary drugs not to make medicaments which can be made up and sold at the pharmacy. A further request was for discussion of the question of the future development of the private pharmacy and the pharmaceutical training associated therewith.

In my report I have decided to deal mainly with economic questions but I shall do my best to make some mention of the above points.

In collaboration with President Tramasure and the members of the Committee, I dispatched a questionnaire to the 41 member countries of the F.I.P. It is with pleasure that I can announce that completed forms were returned from 21 countries, including, in addition to the European states, Cuba, the Philippines, Israel, Lebanon, Pakistan, Tunisia, and Japan. Furthermore, I obtained private information from colleagues abroad who are known to me personally. In this way I often obtained some vital facts regarding the profitableness of pharmacies. I should like to express my deepest gratitude to those associations and colleagues who have gone to so much trouble in giving me some idea of the conditions prevailing in their countries.

Significant Social Changes

I see clearly the ever-growing danger threatening pharmacists in every country in the world and how the forces hostile to us are uniting to form an international organization. It therefore seems to me it is vital for us to establish a forum able to defend us against these attacks.

After two fateful wars the economic structure in most countries was revolutionized and our profession has not been spared. We pharmacists have been most severely hit by the social changes. I am convinced that we cannot afford to stand by and just look on while the sickness benefit societies, for example, close their ranks against us in all countries and successfully limit the sphere of activity of the pharmacist year after year.

Competitive Factors in Retailing

But it is not only the sickness benefit societies. Other national institutions are also trying to get the sale of medicaments into their own hands, and certain trades in particular have been successful in many countries in obtaining the right to sell proprietary medicines for which no prescription is required, as well as simple herbal mixtures, cough syrups, tonics, etc. The sale of medicines by doctors is also a burning problem, as is the sale in hospitals to patients not attending the hospital and in out-patient departments.

I shall now try to give you a picture of the situation based on the information supplied to me in answer to the questionnaire.

• The first question related to permits or licenses for managing a pharmacy or chemist's shop. In 5 countries of the 21 which answered the questionnaire, a pharmacy or chemist's shop can be opened without a license. In 14 countries the license is purely a personal one, while in 2 countries,

Austria and Luxembourg, there is a personal and premises license.

A special point to be made here is that until 1953 pharmacies in the American Zone of Western Germany could be opened without restriction. This state of affairs was only regularized this year by a ban on the opening of more pharmacies. In Italy the license is granted on the basis of a competition, while in Pakistan the pharmacist needs several licenses before he can open a shop.

• The second question, whether the owner of a pharmacy must be a pharmaceutical chemist, was answered in the affirmative by 12 countries and in the negative by 3. In England a company may be the owner of a pharmacy, but the shop must be under the direction of a pharmacist. More or less the same conditions prevail in Northern Ireland, Pakistan, and Japan. In Yugoslavia pharmacies are nationalized, but they are under the management of pharmacists.

• The third question: "Can the owner as a layman own a pharmacy or chemist's shop?" A negative answer was received from 8 countries; 9 countries answered in the affirmative, stating that the responsible manager must be a qualified pharmacist. In Germany, Lebanon, Luxembourg, and Austria it is also possible for a widow to run the business with a responsible manager, but in Germany and Austria there is a lease law with specified exceptions applying to such pharmacies. In Lebanon a widow's shop can be operated for only two years, and an extension of this period is granted only in exceptional circumstances.

• Question 4 in the questionnaire related to the salaries of pharmacists. I shall not burden you with a mass of figures; I should only like to say that in very many countries collective contractual agreements are in force, while in other countries the question of salary is a matter of agreement between the employee and the proprietor. The only exception is Austria, which has a salary fund prescribed by law into which the same sum must be paid for each employee, who then receives his salary from the fund according to his length of service. From the amount to be paid into the fund for each employee, in addition to the salaries, certain other sums must be set aside for other purposes such as the provident fund, holiday fund for all pharmacists working on their own, holiday compensation for the fourth and fifth week of leave of the employees for which the owner of the shop is reimbursed, reimbursement of the expenses of a *locum tenens* for pharmacists having no assistants, as well as the cost of substitutes when employees or the owner are ill. In the pharmaceutical salary fund there is also a death benefit fund, an unemployment fund and an old age pension fund, for which special contributions must be paid. At home in Austria there is a very strict licensing system in operation, and the possibility of being able to open a new shop is extremely remote. The pharmaceutical fund with its institutions and benefits establishes some sort of social equality assuring the employed pharmacist of a suitable old age pension. In Austria this system enables the proprietors of pharmacies and the employees to unite into something like a professional association.

• The fifth question related to the method of payment adopted in dealings with sickness benefit funds and the supplying of medicine by out-patient departments, etc.

The Problem of Compensation

Insofar as the first part of the question is concerned, it was found that in 10 countries settlement is directly with the society, one country granting no discount at all, while in others the discount amounts to 5, 7 and 10%, in some cases as high as 15–20%. In 5 countries sickness benefit societies are unknown. In France and Norway the panel patient pays for the medicine himself and the amount spent is then reimbursed by the society. In England payment is made by the Ministry of National Insurance and Health. In Holland every member of a sickness benefit society chooses a pharmacy and pays nothing for the medicaments. The pharmacist is paid a certain sum for every member of the society who is on his register. This sum is paid 4 times a year, and payment for the medicaments supplied is made at approximately the same intervals. In Japan the conditions are such that every pharmacist can on request qualify as a sickness insurance pharmacist. A sickness insurance pharmacist may make up medicines only on the basis of prescriptions given by insurance doctors. The bills are paid by the insurers. It should be noted that of the 17,500 pharmacists only 10,000 are sickness insurance pharmacists. There are no sickness benefit societies in Sweden, the patient paying for the medicines himself. In special circumstances the patient pays only part of the cost, the rest being met by the State.

With reference to the question of the supplying of medicines by out-patient departments, dispensaries, etc., in 10 countries these institutions do not sell medicines at all. In 7 countries, however, medicines are supplied. In Cuba medicaments are supplied gratis by out-patient departments and welfare centers. In Pakistan there

are municipal welfare pharmacists, and in Lebanon philanthropic institutes distribute medicines free of charge.

• Question 6: "Have the sickness benefit societies their own pharmacies?" It was found that in 11 countries there are no such pharmacies, while they do exist in 5 countries. It must be pointed out that the first sickness benefit society pharmacy was granted permission to operate in Austria only this year and that since then the authorities have received another 6 applications for licenses. In Greece there are two pharmacies for the poor, while in Pakistan there are pharmacies belonging to collective organizations supplying medicines to their members free of charge. Of the 180 sickness benefit societies in Holland, only 4 have their own pharmacies. In France, generally speaking, there are no pharmacies belonging to the sickness benefit societies, but the insurance fund of the mutual insurance societies operates 60 pharmacies. Because of the obligation of their members to patronize only shops belonging to the society, they have an impressive turnover. In addition they have set up a medicine distribution service. Vehicles go to the factories and offices, collect patients' prescriptions, later delivering the medicines in a sealed packet. In France there are also miners' pharmacies similar to those of the mutual insurance societies. According to a decree recently issued, the sickness benefit societies have received permission to found pharmacies, known as welfare pharmacies, for the prevention of industrial accidents. So far not a single sickness society has opened up such a pharmacy. As has already been mentioned, the conditions applying to pharmacies in Yugoslavia are rather different.

• Question 7: "Do the societies authorize (a) proprietary medicines, (b) medicaments, (c) appliances and dressings, etc.?" It was found that in 8 countries the sickness insurance authorizes everything. In 4 countries, as has already been mentioned, there are no sickness benefit societies. In 8 countries there are limited lists for the supplying of proprietary articles, dressings, etc., but in these countries the medicines are supplied free. In 2 countries the supplying of proprietary drugs is actually forbidden.

• With regard to question 8—the proportion of the sickness benefit societies' turnover to the total turnover—it was discovered that there are wide disparities. In 3 countries the proportion is 10–15%, in 5 countries between 30 and 40%, and in 3 countries 40–50%. In all cases the proportion for rural districts was 20–25% lower. The countries with the highest sickness society turnover are: Austria with 60% in the towns and 40% in rural areas, Holland with 70–90% in towns and 60–80% in the rural areas, and Israel with 80%.

• In the case of question 9—the gross profit made by a pharmacy—a fair degree of uniformity was found. In 3 countries the gross profit amounts to 14–25%, in 5 countries 30%, in 7 countries 33%, in 2 countries 35% and in 2 it is 40%. In 3 countries it fluctuates between 30 and 50%.

• With reference to question 10—the average net profit—it must be pointed out that here too some sort of uniformity exists, since the net profit in 12 countries is 10–15%, in 2 countries about 8%, while it is higher in only two countries. The country showing the lowest net profit is Japan with 2–3%. The main reason for this would seem to be that Japan is one of the very few countries in the world where the doctors still have the right to do their own dispensing, the pharmacist existing simply, for all practical purposes, for the casual buyer. In 2 countries there is a special method for calculating the profit, which is equal to 5% plus the salary of the owner as manager of the pharmacy.

• Question 11 related to the purchase of goods, and it was found that in general this amounts to between 60 and 70%.

• Question 12—overhead expenses—was not properly understood by all the organizations in the individual countries, since very divergent replies were received. In 7 countries a percentage of 18–30% was given, but it is probable that taxes were included as net profit.

• Question 13 related to the problem of the sale of other products, in percentages. Here again the results show a great divergence in the sale of cosmetics, veterinary products, preparations for medical diagnosis, for the extermination of pests, dietetic preparations, and mineral waters. The proportion for cosmetics varies between 2 and 25%, that for veterinary preparations between 1 and 10%, while the other articles varied between 0 and 5%

I must ask you to allow me to touch upon a few other points now which some of our colleagues emphasized when replying to the questionnaire or which were mentioned in articles in foreign trade journals.

In the concluding installment of his searching review of pharmacy as practiced in 21 countries, Dr. Hauser touches upon the pharmacists' problems dealing with the ascendancy of proprietary drugs, sales limitation as between pharmacist and storekeeper, medical and veterinary dispensaries, discount allowances to physicians, hospitals and other distributors of drugs, and makes a plea for a retail pharmacy section in the International Pharmaceutical Federation to consider these multiple problems on an international scale.

Preparing Pharmacy for its Role in *ATOMIC MEDICINE*

A review of the application of atomic energy to the diagnosis and treatment of disease, with special reference to pharmacy and pharmacists

By Samuel W. Goldstein, *Director*, *A.PH.A. Laboratory*

NUCLEAR ENERGY represents a force capable of extinguishing mankind or of favorably altering the course of history on this earth more drastically than any other single development by man. Now, only ten years after its dawning, the atomic age is full-blown and man struggles to avert tragic possibilities. Subjected to control and proper utilization, this immense energy can be diverted to useful applications.

First among those interested in the latter are the members of the health professions. With the new knowledge of nuclear reactions, while the horrors of impending doom were being proclaimed by some, investigators and practitioners in the field of medicine were adapting the new radioactive atoms to the alleviation of mankind's ills. The years of study with x-radiations and with radium and radon emanations had prepared the way for tests with the new elements that could be administered systemically. Radioactive materials were available from the few cyclotrons that were built after the invention by E. O. Lawrence (1934) of this type of high-voltage generator. The cyclotron is still a more economical instrument than nuclear reactors for the production of certain desirable radioactive isotopes (radioisotopes). The nuclear reactors, however, made large amounts of radioactive elements and compounds available for medical and biological studies.

The usefulness of radioactive elements is dependent upon the intensity of the emanations and the "half-life" of the radioisotope. The spontaneous emanations from the active isotopes can be alpha rays (helium nuclei), beta rays (electrons), gamma rays (similar to high-energy x-rays) or combinations of them. The half-life is the time required for one-half the amount of the radioactive material to convert itself to a non-active form. This period can vary in different radioactive substances from seconds to years. In terms of therapeutic applications, a preparation containing an amount of isotope (half-life 4 days) equivalent to 50 millicuries (mc.) per cc., would be reduced in strength to 25 mc./cc. four days after preparation; and after four more days the strength would be 12.5 mc./cc. This is determined in practice by consulting the decomposition curve for the isotope on a decay chart and making the required calculation.

Tracer Studies

The ability to follow a radioactive substance by detection of its emanations, either by the effect on a Geiger-Müller counter tube or other recorder or by radioautographs of material in which the substance is concentrated, has become the main basis for biological studies in animal and plant organisms. It enables the investigator to follow "tagged" molecules containing C^{14} atoms introduced as $C^{14}O_2$ for utilization by plants, or in complex compounds administered to man. It permits the determination of the amount of iodine concentrated in the thyroid gland of a patient treated with potassium iodide composed of KI and KI^{131}.

Medical Applications

A detailed article on some aspects of radioisotope therapy of interest to pharmacists was published in THIS JOURNAL, **15,** 360(June 1954). The radioactive tracers used most frequently for diagnosis and treatment are iodine-131, phosphorous-32, and sodium-24. Iodine-131 is an exceptionally useful "tag." It has a relatively short half-life of about eight days; it emits a penetrating gamma radiation that facilitates its

detection; it is easily incorporated into suitable carrier molecules; and it tends to concentrate in functioning thyroid tissue.

Diagnostic. Iodine-131-labeled diiodofluorescein is useful in the localization of brain tumors. This permits accurate approach by the surgeon without an exploratory operation. Administered as potassium iodide, I^{131}, in doses of 25–100 microcuries, it is concentrated to the extent of 50% in 24 hours in the thyroid glands of hyperthyroid patients, contrasted with a concentration of 10–20% in normal individuals.

Therapeutic. Iodine-131 concentration in localized tissue is effectively used for therapeutic action in certain tumors.

Cobalt-60 slugs separated by aluminum spacers and encased in nylon sutures are stitched around malignant tumors involving bladder or prostate to obtain localized effect of the emitted gamma rays. These rays produce less local ionization of tissues so that no scar results such as occurs with the use of less penetrating beta radiation from radium or radon.

Concentration of phosphorus-32-labeled phosphates in rapidly proliferating cells such as tumor cells and bone marrow has resulted in its use in locating and treating superficial malignancies—chronic polycythemia vera (overactivity of blood-cell-forming elements in red bone marrow), Hodgkin's disease and certain cancerous conditions of lymph nodes (lymphoblastoma).

Cobalt-60 is being used to a greater extent as an external source of radiation for the destruction of malignant cells. It is cheaper than radium; it can be preformed to any desired shape before bombarding it to produce the radioactive Co^{60}; its magnetic property permits ready manipulation with suitable magnetic tongs; it emits a more homogeneous gamma radiation than does radium; and there is less danger of needle breakage than with radium or radon. The amount of vitamin B_{12} absorbed by the body in treatment of pernicious anemia is determined from the Co^{60} in the tagged B_{12}. Table I lists some of the properties and applications of the most commonly used radioisotopes.

Important in the diagnosis and treatment of heart diseases and some cases of shock, a rapid method for accurate measurement of cardiac output directs blood from the artery of the patient, who has had an injection of a minute amount of radioactive substance such as iodinated (I^{131}) human serum albumin, into a specially designed Geiger counter. The unit, designed recently at a Veterans Administration hospital, can record the heart actions of 10 patients in an hour.

Table I—Some of the Most Commonly Used Isotopes[a]

Isotope	Type of Ray Emitted	Half-Life	General Types of Application
Carbon-14	1 beta	5,720 years	Biological research
Iodine-131	2 beta	8 days	Biological research
	4 gamma		Diagnosis
			Therapy
Phosphorus-32	1 beta	14.3 days	Biological research
			Diagnosis
			Therapy
Sulfur-35	1 beta	87.1 days	Biological research
Cobalt-60	1 beta	5.3 years	Radiation source
	2 gamma		
Gold-198	1 beta	2.69 days	Cancer
	1 gamma		
Sodium-24	1 beta	14.9 hours	Medical research
	2 gamma		
Bromine-82	1 beta	35.5 hours	Biological research
	7 gamma		Therapy
Iron-55	1 gamma K-capture	4 years	Diagnosis
Chromium-51	1 gamma K-capture	26.5 days	Diagnosis

[a] From table in *Research Today*, **10**, No. 1, 1954.

Sterilization

Experimental studies by a number of pharmaceutical manufacturers have indicated the possibilities of sterilization of drugs and preparations by radiation. The Upjohn Company has successfully produced electron-sterilized ophthalmic ointment of hydrocortisone acetate in a plastic, individual-dosage container. The packed and sealed ointment and container are sterilized by an electron stream in a fraction of a second.

Implications for Pharmacists

Development and applications of radioisotopes are accelerating (see Table II, next page). The tremendous increase in users of radioisotopes in the medical field makes it necessary for pharmacy to study its present and possible future participation in this phase of medical care.

With most of the medical applications of radioisotopes requiring special handling techniques by both physician and pharmacist, the use of these materials is now limited almost entirely to hospitals. It is essential that hospital pharmacists should be thoroughly trained as quickly as possible to handle radioactive materials in order

Table II—Radioisotope Users

Year	Industrial	Medical	Others
1946	18	38	30
1948	56	117	102
1950	206	206	202
1952	583	445	383
1954	1014[a]	859[a]	547[a]

[a] Estimated values, A.E.C. Report, Oct. 1954.

to establish the role of the pharmacist in the development of hospital facilities for radioisotope therapy. The American Society of Hospital Pharmacists, an affiliate of the A.PH.A., has accepted this new challenge. An article based upon the report of its Committee on Isotopes (*Bull. Am. Soc. Hosp. Pharm.*, July-Aug. 1955) sets forth its plans and proposes an outline for a course in isotope pharmacy.

Who can accurately predict how soon refined techniques for handling radioisotopes, increased knowledge of effective therapeutic radiation concentrations, and more accurate data regarding dangerous radiation limits for handlers may permit wider distribution of radioactive materials through properly equipped retail pharmacies? Our educators would be remiss if this new phase of pharmaceutical instruction were neglected.

Sources of Information

The most prolific and authoritative source for information on radioactivity is the A.E.C. A constant stream of unclassified information is made available in published papers, Commission reports, statements and releases. Its course at Oak Ridge is probably the best general short course (4 weeks) available. Twenty-two films dealing with various phases of radioactivity are available on loan from the U.S. Atomic Energy Commission, Oak Ridge, Tenn.

Special courses on radioisotopes are available in different areas. Purdue University offered a short course on Basic Radiochemistry and Applications, July-August, 1955. The emphasis was on industrial applications. The State University of New Jersey has, with the aid of a group of New Jersey industries, established a Radioisotope Center, and the Center will sponsor basic courses on radioisotopes. The Oak Ridge Institute of Nuclear Studies conducts four-week courses on radioisotopes.

A comprehensive bibliography of reports on work with radioisotopes in fields related to biology and medicine is maintained by Abbott Laboratories, Department of Radioactive Pharmaceuticals.

For a limited but useful bibliography of publications, see page 633.

Many of the newer terms being used in the literature on radioisotopes are expressed as abbreviations. Some of the more frequently used terms are defined as follows:

Definitions (A.E.C.)

Airborne radioactive material: dusts, fumes, mists or gases.

Dose: amount of radiation expressed in roentgens, rads or rems.

Dose rate: dose per unit time.

High radiation area: where there exists a radiation level in excess of 100 millirem in any one hour.

Millicurie: that amount of radioactive material which disintegrates at the rate of 37 million atoms per second.

Millirem (mrem or one thousandth of a rem) means:

(a) 1 milliroentgen of x- or gamma radiation.
(b) 1 millirad (9.1 ergs/Gm.) of beta radiation.
(c) 0.1 millirad for protons of energy below 10 Mev (million electron volts); 0.05 millirad for alpha rays and heavy recoil particles.
(d) for neutron energy, the thermal energy is related to the number of neutrons/sq. cm. to obtain the value of 1 mrem.

Personnel monitoring equipment: devices worn or carried by an individual for the purpose of measuring radiation received by him (badges, pocket chambers, pocket dosimeters and film rings).

Rad: unit of absorbed dose (100 ergs/Gm.).

Radiation level: rate of radiation dose at a point or in an area as measured with a suitably calibrated instrument.

Roentgen (r): quantity of x- or gamma radiation such that the associated corpuscular emission per 0.001293 Gm. of air produces, in air, ions carrying 1 esu (electrostatic unit) of quantity of electricity of either sign.

Protection Against Radiation

Recently (July 1955) A.E.C. announced approval of a regulation establishing standards for protection of personnel and the public against radiation hazards. Of particular interest to handlers of "hot" pharmaceuticals is a tabulation of permissible weekly doses for critical organs as given in Table III on the opposite page.

Sources of Radioactive Materials

Unless the presently necessary elaborate and costly isolated area for handling "hot" material can be provided, the pharmacist must limit his participation in this new field accordingly. The radioisotope service of Abbott Laboratories facilitates the pharmacist's participation by eliminating his need for a processing, sterilizing and standardizing unit for radioisotopes and many dosage forms. The main requirements now would be a proper storage and handling division with requisite safeguards for personnel and visitors.

Manufacturing and research units can obtain "hot" materials from the following suppliers with proper A.E.C. order forms, including AEC-374 "Authorization for Radioisotope Procurement":

Abbott Laboratories—isotopes and dosage forms

Baker and Adamson—tagged reagent chemicals

Bio-Rad Laboratories—organic compounds with C^{14} or N^{15}; and compounds prepared to order with S^{35}, P^{32}, or H^2.

Tracerlab—organic compounds including steroids with C^{14}.

Recent Developments

The first International Conference on the Peaceful Uses of Atomic Energy which convened at Geneva, August 8, 1955 (ten years plus two days after the first military A-bomb devastated Hiroshima) was the direct result of President Eisenhower's challenge to the U.N. General Assembly, December 1953. We can here merely indicate the scope and variety of some of the Conference reports in the field of public health.

Cheap radiation from the wastes of atomic power plants will preserve food by cold sterilization; sterilize medical supplies and drugs; prevent trichinosis by killing the parasites in hog carcasses; increase safety of tissues from "banks" used in human replacement surgery.

Radioactive strontium absorbed in baked clay is a usable heat source for 50 years and requires little shielding.

Promising results with radioactive phosphorus in Hodgkin's disease and lymphoblastoma were reported by J. H. Lawrence of California. He also reported the medical use of colloidal particles of different sizes which contained radioactive chromic phosphate and radioactive yttrium. On intravenous injection of suspensions, large particles are carried by phagocytes and localized in liver and spleen while intermediate size particles localize mainly in bone marrow in experiments with rats, rabbits and mice.

The need for international study and agreement on minimum standards of the safety limits of radiation was expressed.

Soviet scientists described four stages of acute radiation sickness: primary general reaction of 1–3 days characterized by patient's poor general condition, malfunction of the digestive system and heart and blood vessels with blood changes; a latent period of apparent good health; a period of marked illness; a period of recovery.

Applications of atomic reactor by-products explained by A.E.C.'s P. C. Aebersold included: lamps of self-luminous phosphor materials; radioisotope batteries with feeble but useful current; chemical changes produced in materials such as plastics and blood extenders by radiation without introduction of impurities; tracing materials, as in cross-country pipelines, and detection of leaks by spotting tracers; tracing insects harmful to health (malaria) and crops; following the utilization of plant foods in crops, and where and how substances such as insecticides are effective.

Hopeful results with injection of suspensions of radioactive gold and zinc in particles 1,000

(Concluded on page 633)

Table III—Permissible Total Weekly Doses in Significant Volumes of Critical Organs under Various Conditions of Exposure[a]

Conditions of Exposure		Dose in Critical Organs (mrem per week)			
Part of body	Radiation	Skin, at basal layer of epidermis	Blood forming organs	Gonads	Lens of eye
Whole body	Any radiation with half-value-layer greater than 1 mm. of soft tissue	600[b]	300[b]	300[b]	300[b]
Whole body	Any radiation with half-value-layer less than 1 mm. of soft tissue	1500	300	300	300
Hands and forearms or feet and ankles or head and neck	Any radiation	1500[c]			

[a] A.B.C. release 660, July 1955.

[b] For exposures of the whole body to x- or gamma rays up to 3 Mev, this condition may be assumed to be met if the "air dose" does not exceed 300 mr, provided the dose to the gonads does not exceed 300 mrem. "Air dose" means that the dose is measured by an appropriate instrument in air in the region of highest dosage rate to be occupied by an individual, without the presence of the human body or other absorbing and scattering material.

[c] Exposure to these limited portions of the body under these conditions does not alter the total weekly dose of 300 mrem permitted to the bloodforming organs in the main portion of the body, to the gonads, or to the lens of the eye.

Typical Days

FROM THE SECRETARY'S DIARY FOR SEPTEMBER, 1955

1st Today at luncheon with Drs. Hoffman and Rubin of the National Association of Chiropodists and Chairman Powers of the Committee on National Formulary, discussing in some detail the compilation of a circular of information on preparations of special usefulness to chiropodists.

6th The big Labor Day week end now over and much talk about planning for Fall meetings and membership campaigns. In the afternoon a visit from Dr. Victoria Steinbiss, a German physician and member of the West German Bundestag, who came with an attaché of the German Embassy to discuss regulation of the practice of pharmacy. Revision of the Pharmacy Act by the Bundestag is in prospect and Dr. Steinbiss was particularly interested in trends in the United States with regard to professionalism in retail pharmacy.

7th At lunch today with Tom Foster of the Public Health Service discussing the coming meeting of the International Pharmaceutical Federation which he will attend and matters pertaining to distribution of the Salk vaccine.

9th Yesterday and today in New York to meet President Heinz, on his return from Puerto Rico, for discussion of accumulated ASSOCIATION business prior to his departure for the International Pharmaceutical Federation meeting in London. A.PH.A. Council members Bob Swain, Newell Stewart, and Hugo Schaefer joined at dinner yesterday for an exchange of views on current ASSOCIATION problems.

11th The week end working on a variety of unfinished projects and then departing on the Federal Express this evening for Boston en route to George Moulton's New Hampshire State Pharmaceutical Association convention at Sugar Hill in the White Mountains.

12th Early arrival this morning in Boston. Then by taxi to the Brudno pharmacy to meet its very able proprietor and join him with Mrs. Brudno in a most delightful automobile trip to the New Hampshire mountains, reaching the Sunset Hill House on Sugar Hill, N.H., in time to listen to a part of the afternoon program of the State Association convention. That evening addressing the N.H. State convention at its annual banquet.

13th Early this morning by rail from Sugar Hill to Washington, D.C., via Springfield, Mass., New Haven and New York. The countryside not yet displaying its beautiful Fall foliage except in the spots touched by early frost and they were splendid samples of the beautiful color changes to come.

14th Among the visitors today, two representatives of the Pharmaceutical Association of Formosa, including its president, Hung Yen Hsu. An interesting discussion of pharmacy problems in Formosa and able to supply some answers to professional questions now worrying Nationalist Chinese pharmacists.

20th The past days involved in conferences and discussions dealing with narcotic and hypnotic drug regulations and finding much confusion in public and some professional minds about the actual facts regarding habituation and addiction. Welcoming Mr. and Mrs. Harry Episcopo of Trenton, N.J. Harry is in charge of the drive for funds which resulted in the acquisition of the headquarters building of his Association.

27th Today in Detroit meeting with President Vis and members of the Executive Committee of the Michigan Branch of the A.PH.A. to discuss preliminary plans for the Detroit convention. A very enthusiastic gathering of the men and women who must bear the brunt of the activities always required of local pharmacists. A preview of the entertainment program that this group has in mind guarantees the usual high standard of A.PH.A. conventions.

30th Now conferring with Major Austin, newly appointed full-time pharmacy consultant to the Surgeon General of the Army, and then to the meeting of the National Research Council Committee on Drug Addiction and Narcotics, at the National Institutes of Health in Bethesda. In the afternoon, joining two Georges, Griffenhagen and Bender, and others at the Smithsonian Institution to view the paintings dealing with the development of pharmacy now on display there. Director Carmichael and Assistant Director Taylor of the National Museum are visibly proud of their pharmacy displays in the Public Health Section, ably presided over by George Griffenhagen. It is well to have pharmacy so competently presented.

4,000,000 new mothers every year can use

There are more than 4 million pregnancies every year... and each one calls for extra amounts of calcium, iron, vitamins...

Calcisalin®

for a better pregnancy

a modern prenatal supplement

Calcisalin supplies better utilized calcium, plus the MDR of iron and vitamins

NOW, new promotion

Heavy direct mail, increased medical journal advertising and greater selling emphasis add up to Calcisalin sales in your store

PRICES

Tablets	Wholesale Price	Fair Trade Minimum
Bottles of 100	$1.50	$2.25
Nursing bottle unit of 300	4.00	6.00
Bulk unit of 5000	53.33	80.00

Better check your stock today!

WARNER-CHILCOTT

N.N.R.

from page 598

dissolving the equivalent of 0.25 Gm. of erythromycin base in not less than 10 cc. of water for injection, U.S.P. This solution retains its potency for 7 days if kept in a refrigerator. *Saline or other diluent should not be employed for making the initial solution in order to avoid gel formation or slow and incomplete solution of the drug.* For adults, the initial solution should be added to 250 to 500 cc. of isotonic sodium chloride solution or 5% dextrose solution and administered by slow intravenous infusion for 20 to 60 minutes. This dose may be repeated every 6 hours. A continuous slow infusion, administering the equivalent of 1 to 2 Gm. of the base over a 24 hour period, may be employed as an alternate method. For children, the initial solution is diluted as for adults but is administered in doses calculated on the basis of the equivalent of 5 mg. of the base per lb. of body weight every 6 hours. Although the initial solution may be used for intravenous injection over a 5 minute period without severe reactions, this is not recommended because of nausea, vomiting, or pain along the vein; thrombosis has occurred in some instances.

ERYTHROMYCIN LACTOBIONATE—Erythrocin Lactobionate—Erythromycin lactobionate, a water-soluble salt of erythromycin suitable for intravenous or intramuscular injection, has the same actions and uses as the base. Oral therapy with erythromycin base or other salts should be resumed as soon as this becomes feasible. Erythromycin lactobionate is administered either intravenously or intramuscularly, preferably by the former route to avoid pain produced by the latter route. Dosage is expressed in terms of erythromycin base. The usual dosage for children and adults is 1 to 2 mg. per lb. of body weight either intravenously or intramuscularly, injected at intervals of 8 to 12 hours. A 5% "stock" solution first should be prepared by completely dissolving the equivalent of 0.3 Gm. of erythromycin base in 6 cc. (or the equivalent of 1 Gm. of base in 20 cc.) of either water for injection or 5% dextrose solution. *Isotonic sodium chloride solution (normal saline) or other inorganic salt solutions should never be used as a solvent for preparing the 5% "stock" solution of erythromycin lactobionate because they cause precipitation of the active ingredient at that concentration.* In the dry form the salt is stable at ordinary temperatures for prolonged periods; the 5% solution is stable for 2 weeks when stored in a refrigerator. For intravenous injection, the 5% solution should be diluted with not less than four volumes of either 5% dextrose or isotonic sodium chloride solution to make a final concentration of not more than 1%. The calculated dose should be injected slowly over a period of not less than 5 minutes to avoid pain along the course of the vein; alternatively, the calculated intravenous dose may be administered by infusion by diluting this in 200 to 500 cc. of 5% dextrose or isotonic sodium chloride solution. For intramuscular injection, the 5% "stock" solution is used undiluted. The calculated dose should be injected deeply into a large muscle with extreme care to avoid subcutaneous deposition. The pain following intramuscular injection is caused by transitory local irritation. A single intramuscular dose should not exceed 0.5 Gm., as a precaution against the production of tissue damage.

N.N.R. Admissions under *Former* Policy of A.M.A. Council on Pharmacy and Chemistry

***p*-Aminosalicylic Acid**—*Tablets Parasal (Buffered)*: 0.5-Gm. Buffered with 11.5% calcium carbonate and 7.7% dihydroxyaluminum aminoacetate. U. S. trademark 537,496. The Panray Corporation, New York, N. Y.

Bacitracin—*Powder Bacitracin (Topical or Intramuscular)*: Vials. Each vial contains the equivalent of 2,000, 10,000, or 50,000 units of bacitracin. The Upjohn Company, Kalamazoo, Mich.

Cyclopentamine Hydrochloride—*Topical Solution Clopane Hydrochloride 0.5%*: 15-cc. bottles. An isotonic solution containing 5 mg. of cyclopentamine hydrochloride in each cc. Preserved with phenyl-mercuric nitrate 1:50,000. Eli Lilly & Company, Indianapolis, Ind.

Diethylstilbestrol-U. S. P.—*Tablets Diethylstilbestrol:* 5-mg. Rexall Drug Company, Los Angeles, Calif.

Folic Acid-U. S. P.—*Tablets Folic Acid:* 5-mg. The Evron Company, Inc., Chicago, Ill.

Hexamethonium Chloride

Powder Hexamethonium Chloride: Bulk; for manufacturing use. Hexagon Laboratories, Inc., New York, N. Y.

Solution Bistrium Chloride: 10-cc. vials. A solution containing 0.135 Gm. of hexamethonium chloride (0.1 Gm. of hexamethonium ion) in each cc. Preserved with 0.9% benzyl al-

cohol. E. R. Squibb & Sons, Division, Mathieson Chemical Corporation, New York, N. Y.

Hydrocortisone

Ointment Cortril: 5- and 14.2-Gm. tubes. An ointment containing either 10 mg. or 25 mg. (5-Gm. tube size only) of hydrocortisone in each Gm. Preserved with 0.18% methylparaben and 0.002% propylparaben. U. S. Patent 2,658,023. Pfizer Laboratories, Division, Chas. Pfizer & Co., Inc., Brooklyn, N. Y.

Lotion Hydrocortone: 88.7-cc. bottles. A lotion containing 10 mg. of hydrocortisone in each Gm. Preserved with 0.15% sodium methyl *p*-hydroxybenzoate. *Ointment Hydrocortone:* 5-Gm. tubes. An ointment containing 10 or 25 mg. of hydrocortisone in each Gm. Sharp & Dohme Division, Merck & Co., Inc., Philadelphia, Pa.

Merethoxylline Procaine—*Solution Dicurin Procane:* 2-cc. ampuls. A solution containing 0.1 Gm. of merethoxylline as the procaine salt (equivalent to 39.3 mg. of mercury) and 50 mg. of theophylline in each cc. Preserved with 0.5% chlorobutanol. Eli Lilly & Company, Indianapolis, Ind.

Prophenpyridamine Maleate—*Tablets Trimeton Maleate:* 37.5-mg. (equivalent to 25 mg. of prophenpyridamine). U. S. Patent 2,567,245 U. S. trademark 509,760. Schering Corporation, Bloomfield, N. J.

Procaine Penicillin G-U. S. P.—*Aqueous Suspension Procaine Penicillin G with Procaine Hydrochloride 2%*: 10-cc. vials. A suspension containing 300,000 units of procaine penicillin G and 20 mg. of procaine hydrochloride in each cc. Preserved with 0.18% methylparaben and 0.02% propylparaben.

Testosterone Cyclopentylpropionate—*Solution Depo-Testosterone Cyclopentylpropionate:* 1-cc. vials. A solution in cottonseed oil containing 0.1 Gm. of testosterone cyclopentylpropionate in each cc. Preserved with 0.5% chlorobutanol. The Upjohn Company, Kalamazoo, Mich.

Testosterone Propionate-U. S. P.—*Solution Testosterone Propionate in Oil with Benzyl Alcohol 10%*: 10-cc. vials. A solution in sesame oil containing 0.1 Gm. of testosterone propionate in each cc. Preserved with 0.5% chlorobutanol. Testagar & Company, Inc., Detroit, Mich.

Thiamine Hydrochloride-U. S. P.

Solution Thiamine Hydrochloride: 10-cc. vials. A solution containing 10 mg. of thiamine hydrochloride in each cc. Preserved with 0.35% chlorobutanol. J. B. Roerig & Company, Chicago, Ill.

Tablets Thiamine Hydrochloride: 10-mg. Success Chemical Company, Inc., Brooklyn, N. Y.

Trichloroethylene-U. S. P.—*Trilene:* 15-cc. tubes, Each tube contains 15 cc. of trichloroethylene. Ayerst Laboratories, Inc., New York, N. Y.

Collector's Corner

. . . . . *from page 600*

the less artistic but significant pharmaceutical compounding equipment.

One of the finest "Apotheke" restorations may be found in the Germanisches Nationalmuseum in Nuremberg. The shop is that of the Stern-Apotheke of Nuremberg of 1727. Other significant public museum collections may be found at the Deutsches Museum in Munich, the Kurpfalzisches Museum in Heidelberg and the Vaterlandesmuseum in Braunschweig, among others.

Among the private collections of pharmaceutical antiquities, one of the most outstanding is the little museum housed in the Uhland Apotheke in Waldenbuch, 23 kilometers south of Stuttgart. Here in this out-of-the-way spot, three rooms adjacent to the pharmacy, which is owned and operated by Mrs. Dörr, are filled with many significant pharmaceutical antiques. Another very interesting private collection is that of Dr. Piners, owner of the Alte Kurfursten Apotheke in Bruhl near Cologne. Dr. Piner's home is a veritable museum in its own right.

The publication of the International Society for the History of Pharmacy entitled *Zur Geschichte der Pharmazie*, under the editorship of Dr. Georg Dann of Kiel, has just commenced a series entitled "Public and Private Pharmaceutical-Historical Collections in Germany," similar in format to "Early American Pharmacies" which appeared earlier in THIS JOURNAL. Due recognition will be given in the series to all outstanding German collections. The first installment covers the restorations in the Focke-Museum in Bremen and in the Goslares Museum, Goslar.

Random Notes from London

Your correspondent is bringing back to the States a replica cast of an ancient stone in the British Museum said to have been used by the Greeks and Romans to roll pills. If so, this ancient stone pill machine antedates the German "invention" of ca. 1750 by nearly 2,000 years.

Interesting prints and apothecary trade cards may be found in the Print Room of both the British Museum and Victoria and Albert Museum, as well as in the Guildhall Library in London. These may shed some new light on the origin and the development of the apothecary show globe. The show globe or show carboy (single decker only) is still very evident in English chemist shops. Also, many chemists own small collections of pharmaceutical antiques which they display within the shop.

Glycerin Suppositories

• • • • • • • • • • • • • *from page 610*

that the fatty acid obtained is not only a mixture but, undoubtedly, different from that obtained when tallow is used as the source.

As might be expected, a higher sodium stearate content gives a firmer suppository, but the advantage of pouring the solution into hot metal molds was surprising. The clue leading to this suggestion was the fact that at room temperature a plastic mold was superior to metal. The poor heat transfer of plastic permits the gel to set more slowly. This was also the reason that the material remaining in the casserole after pouring was invariably more clear and firm than the suppositories of that same batch. The authors believe that the slow setting which a hot mold permits gives a firmer gel since the soap micelles are better oriented or solvated in the gel structure, and that the composition of the mold is only of influence in that it alters the rate of cooling. This rate of cooling is the most important factor in producing a clear suppository—the rate must not be rapid.

REFERENCES

(1) Prout, W. A., THIS JOURNAL, **25**, 1123(1936).
(2) Personal communication.

Abstracts

From technical reports presented to the Section on Practical Pharmacy, A.PH.A. Complete texts of these studies have appeared heretofore in *Drug Standards*, another publication of the ASSOCIATION.

Effect of pH and Iron Salts on the Stability of Solutions of Liver Fraction I, N.F. IX. By Leon O. Wilken, Jr., Frederick V. Lofgren, and Henry M. Burlage (Texas University College of Pharmacy).

Experimental evidence indicates varied effects on the stability of solutions of liver fraction I when iron compounds are added. Ferrous sulfate reduces the stability of riboflavin at *p*H 3.0 to 5.5 but increases the stability of this vitamin at *p*H 5.5 to 7.0, except at *p*H 6. Ferrous sulfate generally increases the stability of nicotinic acid, and addition of ferric ammonium citrate generally increases the stability of both nicotinic acid and riboflavin. The stability of choline is not greatly affected by either of the iron salts. It has been found that liver fraction I samples obtained from various sources vary greatly in their vitamin content, based upon assays of the riboflavin, nicotinic acid, and choline concentrations. Optimum stability of liver fraction I in solution without the addition of an iron compound is obtained at *p*H 3.8 and 5.75. The optimum stability with ferrous sulfate added is at *p*H 3.5 and 5.5, while with ferric ammonium citrate it is at *p*H 4 and 6. The lower *p*H in each case might be considered as the better point for stability of the other acidic vitamins present, but these conditions permit the retention of less than 30 per cent of the original choline content.

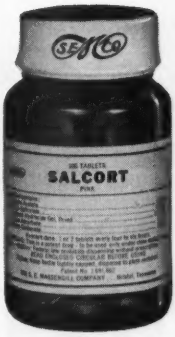
PVP as an Adjunct to Antibacterials. By Harold Sheinaus and G. J. Sperandio (Purdue University School of Pharmacy).

The authors tested the effect of polyvinylpyrrolidone (PVP) on the potency of some antibacterial substances, using a cup-plate method against *M. pyogenes* var. *aureus*. Substances tested included antibiotics, mercury compounds, iodine and chlorine-containing compounds, quaternary ammonium compounds, phenolic compounds, dyes, nitrofurazone, and zinc sulfate. In most instances PVP had little or no potentiating effect on the antibacterial agents tested, and in the case of iodine, *p*-chloro-*m*-xylenol, and zinc sulfate it had a retarding action on their antibacterial power. Combinations of PVP and sodium hypochlorite showed marked increase in antibacterial properties over that of sodium hypochlorite alone. The authors conclude that their limited experiments indicate PVP may have specificity for certain pharmaceutical agents, but no definite pattern was established.

Danger from Candy Medication

The danger of poisoning due to pleasantly flavored candy-like medication is the subject of the first report of the recently formed A.M.A. Committee on Toxicology. The report notes that antibiotics, antiepileptics, antihistaminics, barbiturates, sulfonamides, salicylates (aspirin), and vitamins (one-third of annual volume of sales of vitamins) are available as candy medications for use primarily in pediatrics.

An editorial in *J.A.M.A.*, **158**, 48(1955) states that the Committee feels the statistics on salicylate poisoning are sufficiently suggestive to warrant caution. "The public should be informed and constantly reminded that many of these products that are packaged and flavored to look like candy are in reality potent drugs, some of which can be dangerous with over doses."



this new antiarthritic

moves fast off the shelf

Salcort

More and more Salcort is being prescribed each day, because this cortisone-salicylate combination has proved unusually effective in the treatment of arthritic conditions. Virtually without side effects, Salcort causes no withdrawal problems.

Be certain you're well-stocked with Salcort. It moves fast—and returns you a generous profit. Heavy, continuing, nation-wide promotion keeps the Rxs coming in.

Supplied in bottles of 100 pink monogrammed tablets

Each Salcort Tablet contains:

Cortisone acetate	2.5 mg.
Sodium salicylate	0.3 Gm.
Aluminum hydroxide gel, dried	0.12 Gm.
Calcium ascorbate (equivalent to 50 mg. ascorbic acid)	60 mg.
Calcium carbonate	60 mg

Effective in:

Rheumatic fever
Rheumatoid arthritis
Rheumatoid spondylitis
Bursitis
Still's disease
Neuromuscular affections

THE S. E. MASSENGILL COMPANY
Bristol, Tenn. New York Kansas City San Francisco

Outstanding new Lederle product!

INCREMIN*

Lysine-Vitamin Drops

Combines lysine, an amino acid, with Vitamin B_1, B_6, and B_{12}—a formula with remarkable ability to stimulate appetite and weight gain in infants and children. Equally effective as an appetite stimulant for the elderly.

Cherry-flavored INCREMIN can be added to milk or milk formula, or other liquid. Handy, unbreakable "squeeze" bottle makes accurate dosage easy.

SOLID SALES POTENTIAL! INCREMIN is now being introduced to the nation's pediatricians and GPs through detailing, advertising, and direct mail campaigns. It will quickly become a steady-moving, good-profit prescription item. And—it may be sold over-the-counter without prescription. Order now so you can fill every call for INCREMIN!

In 15 cc. polyethylene dropper bottle.

LEDERLE LABORATORIES DIVISION
AMERICAN Cyanamid COMPANY
PEARL RIVER, NEW YORK

Lederle

*REG. U.S. PAT. OFF.

Atomic Medicine

• • • • • • • • • • • • • • • from page 625

times larger than colloidal particles used in treatment of other forms of cancer were reported in treatment of lung cancer (by i.v. injection) and ovarian cancer (by injection into the abdominal cavity).

A.E.C. Chairman Strauss announced that the Ford Motor Company Fund has established a million dollar fund to provide annual world-wide atoms-for-peace awards of $75,000 to scientists and inventors and engineers, either as individuals or teams or groups who, in the opinion of a competent International Jury of Awards, has made the greatest contribution during the year to peaceful uses of atomic energy.

The intensive studies by scientists of all nations regarding behavior and applications of radioactive materials is a risk that has been taken by mankind. The U.S. has led the nations of the earth in an attempt to make it a calculated risk in the hope that the potential benefits of this awesome knowledge can be realized, while the nations mature sufficiently to eliminate the need for destructive methods of settling their disagreements.

BIBLIOGRAPHY

"Atomic Energy as Related to Medicine," Durham, C. T., *J. Nat. Assoc. Retail Druggists*, **76** (Dec. 20, 1954).
"Clinical Use of Radioactive Isotopes," Bertram, V. A., Charles C Thomas, 1950.
"Contribution of Atomic Energy to Medicine," Hearings Before the Joint Committee on Atomic Energy, 83rd Congress, 2nd Session, 1954.
"Design of Laboratories for the Safe Handling of Radioisotopes, The," Hawkins, M. B., Isotopes Division, Circular B-5, A.E.C., Oak Ridge, Tenn.
"Emergency Exposures to Nuclear Radiation," Civil Defense Technical Bulletin, TB 11-1, March 1952.
"Equipment for Radiochemical Operations," Tompkins, E. R., Isotopes Division, Circular A-6, June 1948, A.E.C.
"Facilities and Equipment for Isotopes Program," Morgan, G. W., Hospitals, **29**, No. 3, 103 (March 1955).
"Glossary of Scientific Terms Relating to Atomic Energy," from Senate Report No. 1211, 79th Congress, 2nd Session, 1948.
"Glossary of Terms Used in Atomic Energy and Nuclear Physics," A.M.A. Council on Physical Medicine, 1947.
"Handling of Radioactive Isotopes Used in Medical Therapy and the Preparation of Radioactive Colloidal Gold, Techniques in the," Sheppard, C. W., Hahn, P. F., Isotopes Division Circular A-3, A.E.C.
"Manual of Artificial Radioisotopes Therapy," Hahn, P. F., Academic Press Inc., 1951.
"Pharmaceutical Aspects of Atomic Energy," Durham, C. T., THIS JOURNAL, **11**, 346(1950).
"Protective Precautions in the Handling of Radioactive Materials," Morgan, G. W., *Science Education*, **32**, 2(1948).
"Radioactive Isotopes in Hospital Pharmacies," *Bull. Am. Soc. Hosp. Pharmacists*, **7**, 178(July-Aug. 1950).
"Radioactivity Units and Standards," Evans, R. D., *Nucleonics*, **1**, No. 2, 32(Oct. 1947).
"Radioisotope Facilities in the General Hospital," Ingraham, S. C., and Taylor, W. R., *Hospitals*, **26**, 74(Dec. 1952).
"Radioisotope Therapy of Interest to Pharmacists, Some Aspects of," Hutchinson, G. B., THIS JOURNAL, **15**, 360 (1954).
"Radioisotopes in Pharmaceutical and Medical Studies I," Tabern, D. L., Taylor, J. D., Gleason, G. I., *Nucleonics*, **7**, No. 5, 3(1950).
"Radioisotopes, Production and Availability of," Aebersold, P. C., Isotopes Division, A.E.C.
"Radiological Health, Concepts of," Bulletin, U. S. Dept. of Health, Education and Welfare, Jan. 1954.
"Safe Handling of Radioactive Isotopes, Handbook 42," U. S. Department of Commerce, National Bureau of Standards.

Straight from Headquarters

• • • • • • • • • • • • • • • from page 608

the 10 year old age group and is twice the rate among other women.

The recommendation of the Department is being transmitted by the Public Health Service to the state and territorial health officers charged with administering the voluntary control plans, as well as to other groups and organizations concerned with the distribution and administration of the vaccine.

A.PH.A. Officers Elected to Serve in 1956–57

THE Board of Canvassers of the AMERICAN PHARMACEUTICAL ASSOCIATION met in Washington on October 7 and 8, 1955, to count the votes cast in the election of officers who will be installed at the 1956 convention. The Board includes J. Lester Hayman, chairman; William J. Dixon and Harry C. Zeisig. L. M. Kantner and Noel E. Foss served as alternates. Mr. Zeisig was unable to attend the meeting on account of illness.

The following officers were elected and will be installed at the annual convention in Detroit, Mich., the week of April 8, 1956:

President-elect John A. MacCartney, manufacturing pharmacist, Detroit, Mich.

First Vice-President-elect Ronald V. Robertson, practicing pharmacist, Spokane, Wash.

Second Vice-President-elect John J. Dugan, practicing pharmacist, New Haven, Conn.

Members-elect of the Council for 3 year terms

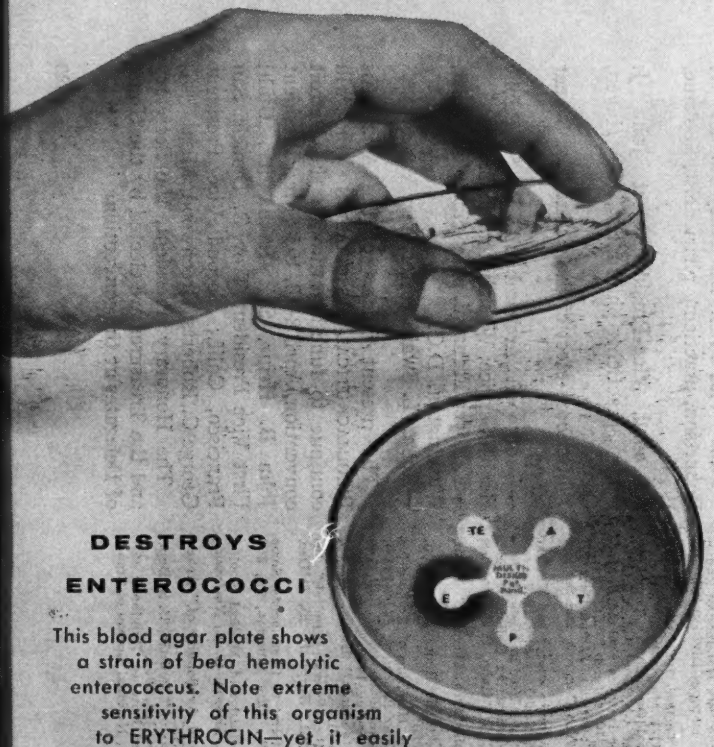
—**George F. Archambault,** U. S. Public Health Service, Washington, D.C.

—**F. Royce Franzoni,** practicing pharmacist, Washington, D.C.

—**Robert L. Swain,** editor, New York.

The present officers of the AMERICAN PHARMACEUTICAL ASSOCIATION, who will continue to function through the Detroit convention, April 8–13, 1956, are: President John B. Heinz, Salt Lake City, Utah; First Vice President Troy C. Daniels, San Francisco, Calif.; Second Vice President George C. Roberts Greenwood, Miss.

The Honorary President, the Secretary and the Treasurer are elected by the House of Delegates at the convention.



DESTROYS ENTEROCOCCI

This blood agar plate shows a strain of *beta* hemolytic enterococcus. Note extreme sensitivity of this organism to ERYTHROCIN—yet it easily resists the other antibiotics. Additional data: A study[1] involving 202 enterococcic strains showed sensitivity to erythromycin in 99.4% of *alpha* hemolytic strains and 94.3% of *beta* hemolytic strains.

specific against coccic infections

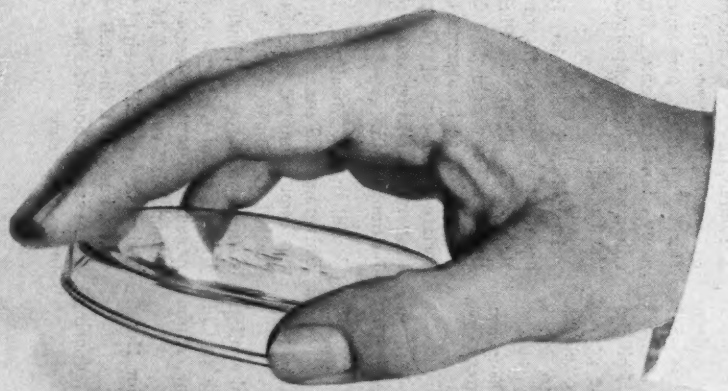
Now, you can prescribe *specific therapy against* staph-, strep- or pneumococci by simply writing *Filmtab* ERYTHROCIN Stearate. Since this coccic group causes most bacterial respiratory infections (and since these organisms are the very ones most sensitive to ERYTHROCIN) doesn't it make good sense to prescribe *Filmtab* ERYTHROCIN when the infection is coccic?

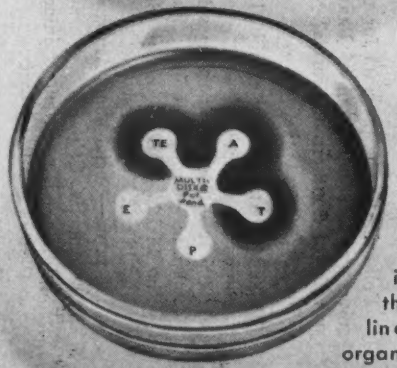
filmtab

Erythrocin®

(Erythromycin Stearate, Abbott)
STEARATE

with little risk





SPARES

INTESTINAL FLORA

This sensitivity test shows ERYTHROCIN and the same antibiotics against a typical intestinal strain of *E. coli*. Note that ERYTHROCIN and penicillin do not affect this gram-negative organism—although the other antibiotics show marked inhibitory action.

with little risk of serious side effects

Since ERYTHROCIN is inactive against gram-negative organisms, it is less likely to alter intestinal flora—with an accompanying low incidence of side effects. Also, your patients seldom get the allergic reactions sometimes seen with penicillin. Or loss of accessory vitamins during ERYTHROCIN therapy. *Filmtab* ERYTHROCIN STEARATE (100 and 250 mg.) is supplied in bottles of 25 and 100. At pharmacies everywhere. Abbott

filmtab

Erythrocin®

(Erythromycin Stearate, Abbott)

STEARATE

® Filmtab—Film sealed tablets; patent applied for.

News *and* Notes . .

COLLEGES

A 16-week survey course in pharmacology, designed to provide students having no background in modern pharmacology with an understanding of pharmacological and therapeutic action of drugs, got underway at **Rutgers University College of Pharmacy** September 21. Dr. Charles D. Hendley of the Wallace Laboratories Division of Carter Products is the course lecturer. Drs. B. N. Craver of E. R. Squibb and Sons, F. M. Berger of Wallace Laboratories, and M. J. Rodman of Rutgers University College of Pharmacy are assisting Dr. Hendley in special lectures. Also offered by Rutger's Pharmaceutical Extension Service is a 16 week course in the development and marketing of drugs.

The **University of Connecticut College of Pharmacy** began its 31st year on September 19 with a graduate student enrollment of 20, in addition to the undergraduate enrollment of 327, which is the largest in its history.

The **Philadelphia College of Pharmacy and Science** is again included in the ten colleges and universities of the Philadelphia area offering lecture programs through the WFIL-TV University of the Air, Channel 6, Philadelphia. These illustrated talks on the general theme of "Look to Your Health" are telecast on Friday mornings, from 11:15 to 11:32, with simultaneous telecasts over stations in Wilkes-Barre, Pa., York, Pa., and Binghamton, N.Y. Beginning October 7, 1955, they will extend through January 27, 1956.

Following is the program for the 50th anniversary of the **School of Pharmacy, University of Southern California,** November 4, 1955:

12:00 M.—Anniversary exhibit, buffet luncheon on the campus.
1:30 p. m.—Tour of pharmacy school exhibits
4:00 p. m.—Group meetings: Phi Delta Chi, Rho Pi Phi, Lambda Kappa Sigma, Alpha Iota Pi and Kappa Psi.
6:00 p. m.—Social hour, Ambassador Hotel, Los Angeles, Calif.
7:30 p. m.—Dinner, entertainment, dancing at the Ambassador Hotel.

J. Warren Lansdowne, chairman of the A.PH.A. Committee on Public Relations, addressed an all-school convocation of the **Temple University School of Pharmacy** on Wednesday, October 5. Mr. Lansdowne spoke on the importance of pharmacists participating in the annual observance of National Pharmacy Week.

Graduate students in industrial pharmacy at the **St. Louis College of Pharmacy and Allied Sciences** will visit 15 pharmaceutical and chemical manufacturers in the St Louis area during 1955–56 to supplement their course work in pharmaceutical products, unit operations, and plant management and operation.

Faculty Changes and Additions

Dean Constantine N. Meriano of the **New England College of Pharmacy** announced the appointment of five new members to the faculty: Dr. Clifford Coles, as associate professor in chemistry; Dr. Norman Rosenberg, assistant professor in chemistry; Wallace Kreisman, physics instructor; Robert Paxinos to teach pharmaceutical calculations; and Harry Finkelstein, assistant professor in pharmacy administration. . . .Dr. Herbert C. Raubenheimer has been appointed assistant dean of the College.

Dr. Edward B. Truitt, Jr., has resigned as assistant professor of pharmacology and A. H. Robins Co. Fellow in Pharmacology at the Bowman Gray School of Medicine of Wake Forest College to assume the position of associate professor of pharmacology at the **University of Maryland School of Medicine,** Baltimore, Md.

William B. Swafford, instructor at the **University of Tennessee School of Pharmacy,** has been promoted to assistant professor. . . . Robert G. Shaheen, has been appointed assistant professor of pharmacy at **Duquesne University**. Dr. Joseph A. Feldman has been named assistant professor at its School. . . . Robert W. Krutz, Jr., a June graduate of the University of Mississippi School of Pharmacy, has joined the staff of the **University of Tennessee School of Pharmacy** as an instructor in pharmacy. . . .

associations, colleges, manufacturers, people . . .

PEOPLE

L. Earle Arnow, vice president and director of research of Sharp & Dohme, Division of Merck & Co., Inc., was awarded the University of Minnesota Outstanding Achievement Award at the 128th national meeting of the American Chemical Society at the University of Minnesota.

Professor Robert B. Woodward of Harvard University, who had a leading part in the synthesis of quinine, cortisone and lysergic acid—a drug used in studying mental disease—has been awarded the 1956 William H. Nichols Medal of the American Chemical Society's New York Section.

Dean William A. Jarrett of the Creighton University College of Pharmacy was honored at a special dinner given in his behalf on October 4 to commemorate his twenty years of faithful service to the College of Pharmacy. Guest speaker at the dinner was Dean Howard C. Newton of the Massachusetts College of Pharmacy, former dean of Creighton Pharmacy.

Sister Mary Jeanette, chief pharmacist at Mary Immaculate Hospital in Jamaica, N.Y., is to receive the award presented by the AMERICAN PHARMACEUTICAL ASSOCIATION for the best hospital pharmacy display during National Hospital Week.

A recipient of the Lascoff Award, Sister Mary Jeanette has been in hospital pharmacy practice for more than 40 years.

The award, a plaque, will be presented at the annual meeting of the American Society of Hospital Pharmacists to be held in conjunction with the convention of the A.PH.A. in Detroit during the week of April 8, 1956.

National Hospital Week, sponsored annually by the American Hospital Association and participated in by members of the A.S.H.P., was observed this year from May 8 to 14.

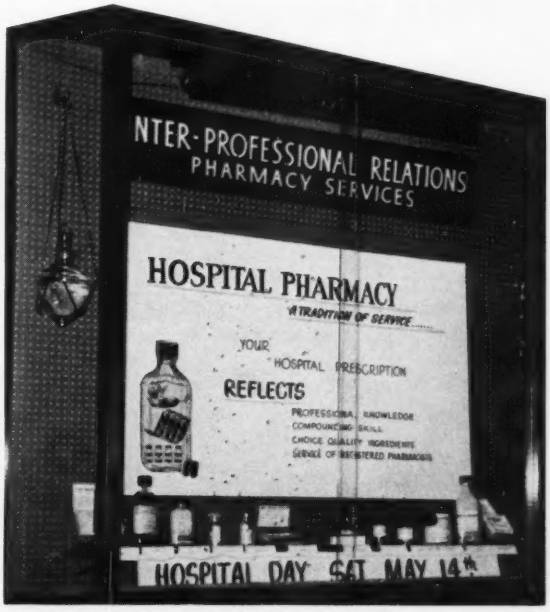
Dr. James H. Kidder, dean of the Fordham University College of Pharmacy, who is a colonel in the U.S. Army Medical Corps Reserve, has been granted an extended leave of absence from the College to serve as special assistant for Reserve affairs to the Army's Surgeon General. While Col. Kidder is on active military duty his duties as dean will be assumed by Dr. Albert J. Sica, chairman of the Department of Pharmacy and associate dean of the College.

The New Jersey State Board of Pharmacy has elected A.PH.A. member **Bernard L. Gerson** as its new president.

Calvin Berger, New York City pharmacist and A.PH.A. member, has been elected president of the New York State Pharmaceutical Association.

Health Information Foundation has announced the election of **Dr. J. Mark Hiebert,** president of the Sterling Drug Co., as a vice president and member of its Executive Committee.

(Continued on next page)



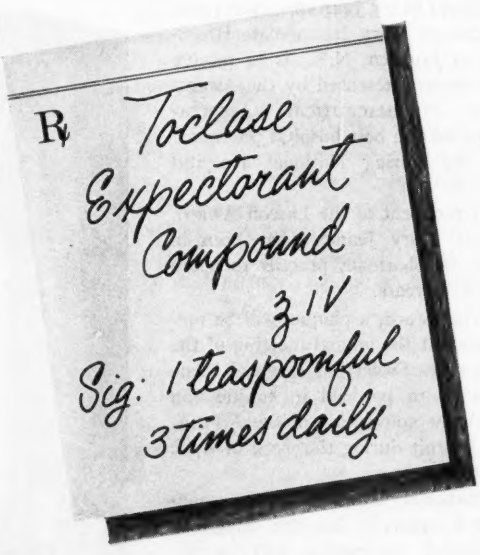
Sister Jeanette's Winning Hospital Pharmacy Display

News *and* Notes . . .

An exhibit of 30 oil paintings in the series, "A History of Pharmacy in Pictures," was held all this month at the Smithsonian Institution, Washington, D. C. Coincident with National Pharmacy Week, the exhibit was hosted on opening day by George A. Bender of Parke, Davis & Company, who conceived and developed the idea, and the artist of the series, Robert A. Thom.

Shown discussing the painting of the founding of the AMERICAN PHARMACEUTICAL ASSOCIATION in 1852 are (l. to r.) Mr. Bender, A.PH.A. Secretary Robert P. Fischelis and Dr. Leonard Carmichael, secretary of the Smithsonian.

when you see . . .



Pfizer PFIZER LABORATORIES, *Division, Chas. Pfizer & Co., Inc.*, Brooklyn 6, N.Y.

ASSOCIATIONS

Harry A. Kimbriel, marketing vice president of Eli Lilly and Company, has been named executive secretary of the **National Wholesale Druggists' Association,** filling the vacancy caused by E. Allen Newcomb's resignation.

Mr. Kimbriel, who is head of the Lilly domestic marketing operations, has been prominently connected with the drug industry for more than 25 years. He will take over his new position November 15 following the Association's 81st annual convention at White Sulphur Springs, W. Va., November 5–9.

Harry A. Kimbriel

The **New York State Pharmaceutical Association** has set up a committee to work with the State Health Department in developing a program of preventive services in which all New York State pharmacists could participate. The committee appointed by Calvin Berger, president of the association, consists of Messrs. Berger, Nicholas S. Gesoalde, John F. O'Brien, Irving Rubin and David Beiles.

The **United Cerebral Palsy** sixth annual convention will be held in Boston, Mass., at the Hotel Statler November 11 through 13.

Dr. Leonard H. Schuyler has been named assistant medical director by the **American Heart Association** .... The **New York Heart Association** will hold an all-day conference on rheumatic fever and heart disease, November 29, at the Biltmore Hotel, New York.

One of the highlights at the eighth annual Drug, Cosmetic and Sundry Show sponsored by the **Pharmaceutical Council of Greater New York** during September 20–22 was a model prescription department. On-the-spot consultant service on store improvement was offered during the 3-day show.

it means... specific **cough control...**

profitable **cough control** with

TOCLASE*

BRAND OF CARBETAPENTANE CITRATE

build Rx business Be prepared with adequate stocks for heavy fall and winter cough business. Order today.

	Product Number	Suggested Retail	Your Cost	Your Profit
EXPECTORANT COMPOUND (sugar free, cherry flavor, amber color), bottles of one pint	4431	$6.88	$4.13	$2.75
TABLETS, 25 mg., bottles of 25	4411	1.83	1.10	.73
SYRUP (cherry flavor, red color), bottles of one pint	4421	6.25	3.75	2.50

*Trademark

A.PH.A. BRANCHES

STUDENT BRANCHES

Elections

Irvin Udell is the newly elected president of the **University of Illinois Student Branch;** other new officers are: David Bluminfeld, vice president; Ann Schuler, secretary; Frank Horwitz, treasurer.

Officers for 1955–56 at the **University of California Student Branch** are: Richard Stanhope, president; William Burk, vice president; Patricia S. Otte, secretary; Robert McKay, treasurer.

Current officers of **Montana State University School of Pharmacy Student Branch** are Donald Peterson, president; Karl Tamborini, vice president; John W. Green, secretary; and Robert C. Enger, treasurer.

The **University of Puerto Rico College of Pharmacy Student Branch** will be served by the following officers during the year 1955–56: Pablo E. Rodriguez, president; Oscar F. Pont, vice president; Carmen Eunice Padilla Pabon, secretary; and Jose R. Mendoza, treasurer. Dr. Leo B. Lathroum is faculty advisor of the Branch.

Officers for 1955–56 at the **University of Oklahoma Student Branch** are: Jack Coffey, president; Cullen Talton, vice president; Jane Harvey, secretary; Katie Lee Hall and Mona Griffin, co-treasurers.

Newly elected officers of the **Ohio State University Student Branch** are: Roger Cain, president; Jerry Marietti, vice president; Faye Campbell, secretary; Jerry Weintraub, treasurer.

Officers for 1955–56 at the **University of Utah Branch** are William V. Stenberg, president; Ed Filippetti, vice president; and Joan Pascoe, secretary. Dr. Ewart A. Swinyard is treasurer and faculty advisor. G. Scott Hansen is historian and Delia Martin is editor of *Pharmic Ute.*

Charles Robert Seaton is the newly elected president of the **Ohio Northern University Student Branch.** Other officers are Ralph Carroll Smith, vice president; Ralph Dunbar, secretary; and William Gillespie, treasurer. Dean Albert C. Smith and Dr. C. O. Lee serve as faculty advisors to the Branch.

The **University of Georgia Student Branch** has elected the following officers for the current college year: Earl Clifford Gable, president; Max E. Conner, vice president; Bobbie Burns, corresponding secretary; Edith Evans, recording secretary; Joe Bowman, treasurer. Dr. Seldon D. Feurt will serve as faculty advisor.

Harry Berger has been elected to serve as president of the **Brooklyn College of Pharmacy Student Branch** during 1955–56. Other officers are Russel Hertz, vice president; David Farber, secretary. Professor Lyman D. Fonda is treasurer and faculty advisor of the Branch.

LOCAL BRANCHES

The **Northern New Jersey Branch** held a joint meeting with the Rutgers University College of Pharmacy Student Branch on October 5. Robert E. Abrams, executive secretary of the American College of Apothecaries spoke on the topic "Pharmacy—Professional and Otherwise."

Dr. Bettylee Hampil, director of virus research, Sharp & Dohme Division of Merck & Co., Inc., discussed "Polio Virus Vaccine—Present and Future" at the October 13 meeting of the **Philadelphia Branch.** William L. Doyle, the dinner speaker, chose as his subject, "Jets, Rockets and Satellites." He is in charge of rocket research at Temple University.

A recent meeting of the **Baltimore Branch** was given over to a panel discussion on "Higher Education in Pharmacy." Participants were: Nathan I. Gruz, Victor H. Morgenroth, Jr., Henry M. Golditch, Charles E. Spigelmire.

Meeting jointly on August 30, members of the **Miami Branch** and the Southeast Florida Society of Hospital Pharmacists were audience to a discussion by Abbott Laboratories' representatives covering such diversified topics as intravenously administered anesthesia, barbiturates and sedatives and recent advances in antibiotic therapy. The role of radioisotopes in medicine and pharmacy also came in for discussion.

quick . . . what's a good B complex?

sur-Bex® with C

(ABBOTT'S B-COMPLEX TABLETS WITH C)

Each SUR-BEX with C tablet supplies:

Thiamine Mononitrate	6 mg.
Riboflavin	6 mg.
Nicotinamide	30 mg.
Pyridoxine Hydrochloride	1 mg.
Vitamin B_{12} (as vitamin B_{12} concentrate)	2 mcg.
Pantothenic Acid (as calcium pantothenate)	10 mg.
Ascorbic Acid	150 mg.
Liver Fraction 2, N.F.	300 mg. (5 grs.)
Brewer's Yeast, Dried	150 mg. (2½ grs.)

Abbott

As a dietary supplement: 1 or 2 tablets daily.

For stress, or postoperative convalescence: 2 or more tablets daily.

509198

NEW Prescription Products

All items on which information has been received in the past thirty days are reported here. Manufacturers are urged to send details of their new products as early as possible, so that pharmacists through these pages will have full information at the same time, or even before, products are detailed to the physician. For inclusion in this department, for which there is no charge, send descriptive literature to the Practical Pharmacy Edition, Journal of the American Pharmaceutical Association, 2215 Constitution Avenue, N.W., Washington 7, D.C.

Ambar Tablets
Ambar Extentabs

Description: Each yellow compressed Ambar tablet contains methamphetamine HCl, 3.33 mg.; and phenobarbital, 21.6 mg. Each yellow, coated Ambar Extentab (extended release tablet) contains the equivalent of 3 Ambar tablets.

Indications: Ambar is recommended for the amelioration or relief of the symptoms attending tension-anxiety states and as an appetite depressant.

Administration: One or two tablets, 3 or 4 times daily or as conditions indicate. One or two Extentabs before breakfast for uniform effects throughout the day. *Caution:* Patients with hypertension or cardiovascular disease should be under observation until their response to Ambar is established.

Form Supplied: Both products in bottles of 100 and 500 AHR-stamped tablets.

Source: A. H. Robins Co., Inc., Richmond, Va.

Bacitracin-Neomycin Ointment and Bacitracin-Neomycin Ophthalmic Ointment

Description: Both ointments contain, in each Gm., neomycin (as sulfate), 3.5 mg., and bacitracin, 500 units, in a lanolin-petrolatum base.

Indications: Topical—To prevent or treat skin infections due to gram-positive or gram-negative bacteria. Ophthalmic—To relieve inflammation and prevent or treat infection.

Administration: Apply locally. *Warning*—On prolonged use of these ointments an overgrowth of nonsusceptible organisms, particularly monilia, may occur.

Form Supplied: Topical—1/2-oz. tubes. Ophthalmic—1/8-oz. tubes.

Source: Paul Maney Laboratories, Inc., Cedar Rapids, Iowa.

Cortef Oral Suspension

Description: A fruit flavored, orange colored liquid containing 10 mg. of hydrocortisone (as cyclopentylpropionate) in each 5 cc.

Indications: Treatment of rheumatic disease, allergic conditions, certain types of dermatitis and eczema, acute ocular diseases and certain blood disorders.

Administration: Daily requirement depending on disease and severity, administered orally in divided doses, usually 3 or 4 each day.

Form Supplied: 4-oz. bottles.

Source: The Upjohn Company, Kalamazoo, Mich.

Diafen Tablets

Description: Small tablets containing, in each, 2 mg. of diphenylpyraline HCl.

Indications: For allergy reactions amenable to antihistamine therapy.

Administration: One tablet every four hours. Children over six years, one tablet three times daily; younger children, one-half tablet twice daily.

Form Supplied: Bottles of 100 and 1,000.

Source: Schenley Laboratories, Inc., New York, N.Y.

Dipaxin Tablets

Description: Each scored tablet contains 5 mg. of diphenylacetylindandione.

Indications: For use as a long-acting anticoagulant.

Administration: Orally, as directed.

Form Supplied: Bottles of 100 tablets.

Source: The Upjohn Company, Kalamazoo, Mich.

Dura-Tab S.M. Dexetal

Description: Each tablet (No. 1) contains: *d*-amphetamine sulfate, 15 mg., and phenobarbital 3/4 gr.; or (No. 2) *d*-amphetamine sulfate, 10 mg., and phenobarbital, 1/2 gr., in a sustained medication form.

Indications: For relief of mild depression, and to control appetite in weight reduction.

Administration: Orally, one tablet in the morning, or as directed by physician.

Form Supplied: Bottles of 30, 100 and 250 tablets.

Source: The Wynn Pharmacal Corporation, Philadelphia, Pa.

Dura-Tab S.M. *d*-Amphetamine Sulfate

Description: Tablets containing, in each, 10 or 15 mg. of *d*-amphetamine sulfate. The sustained medication tablet releases the drug during eight to ten hours.

Indications: For control of appetite and elevation of mood.

Administration: One tablet in the morning.

Form Supplied: Bottles of 30, 100 and 250.

Source: Wynn Pharmacal Corporation, Philadelphia, Pa.

Equanil Tablets

Description: Each tablet contains 400 mg. of meprobamate (2-methyl-2-*n*-propyl-1,3-propanediol dicarbamate).

Indications: In anxiety and tension states, sleeplessness due to worry, and muscle spasm.

Administration: Orally, as directed by physician.

Form Supplied: Bottles of 48.

Source: Wyeth Laboratories Inc., Philadelphia, Pa.

Ilotycin Glucoheptonate I.V. for Injection

Description: Ampuls containing amounts of erythromycin glucoheptonate powder equivalent to 250 mg., 500 mg., or 1 Gm. of erythromycin. Prepare primary solution for use by addition of at least 10 cc. of water for injection to the 250- and 500-mg. sizes and 20 cc. to the 1-Gm. size, and shake until dissolved.

Indications: For prompt effect against infections caused by gram-positive bacteria in patients unable to take oral medication.

Administration: Intravenous infusion—Add primary solution (10 or 20 cc.) to 250–500 cc. of saline or 5% dextrose and administer slowly during 20–60 minutes. May repeat every 6 hours. Continuous infusion—Add primary solution to amount of diluent to be infused during 24 hours. Children—5 mg./lb. of body weight every 6 hrs.

Form Supplied: 20-cc. size vial (ampul) contains 250 mg.; 30-cc. size contains 500 mg.; 50-cc. size contains 1 Gm.

Source: Eli Lilly & Company, Indianapolis, Ind.

Ilotycin Solution I.M.

Description: Ampuls, containing in each cc. of solution: erythromycin, 50 mg.; digammacaine (1-benzamido - 1 - phenyl - 3 - piperidinopropane), 2%; in diethyl carbonate, with phenol, 0.5%, preservative.

Indications: For prompt establishment of effective serum levels of wide-spectrum antibiotic.

Administration: Moderate infection—2 cc. intramuscularly every 8–12 hours. Severe infection—4 cc. every 4–6 hours. Children—1–2 cc. every 6–8 hours. Change to oral tablet medication when possible.

Form Supplied: Packages of 6 and 100 2-cc. ampuls. Individual 10-cc. vials.

Source: Eli Lilly & Company, Indianapolis, Ind.

Lotusate Caplets

Description: Caplets (capsule shaped, coated tablets) containing, in each, 120 mg. (purple), 50 mg. (salmon) or 30 mg. (yellow) of talbutal (5-allyl-5-*sec.*-butylbarbituric acid).

Indications: Sedative and hypnotic.

Administration: Sedative—30 or 50 mg. orally two or three times daily. Hypnotic—120 mg. orally fifteen to thirty minutes before retiring.

Form Supplied: All sizes in bottles of 100 and 1,000 Caplets.

Source: Winthrop-Stearns, Inc., New York, N. Y.

Mycitracin Ophthalmic Ointment

Description: Each Gm. of ointment contains: bacitracin, 500 units; neomycin sulfate, 5 mg.; polymyxin B sulfate, 5,000 units.

Indications: Antibacterial for eye infections.

Administration: One to three times daily.

Form Supplied: 1/8-oz. tubes with tips.

Source: The Upjohn Company, Kalamazoo, Mich.

NEW Prescription Products

Nembu-Serpin Filmtab

Description: Tablets containing in each: pentobarbital calcium, 30 mg.; reserpine, 0.25 mg.

Indications: Sedative-tranquilizing-antihypertensive agent for mild anxiety states and mild essential hypertension.

Administration: As directed by physician.

Form Supplied: Bottles of 100 and 500 Filmtabs.

Source: Abbott Laboratories, North Chicago, Ill.

Nitralox Tablets

Description: Each scored yellow tablet contains 1 mg. of alseroxylon (*R. serpentina* fraction) and 10 mg. of pentaerythritol tetranitrate.

Indications: For prophylaxis in reducing the number and severity of attacks of angina pectoris.

Administration: Orally, one tablet, or in refractory cases two tablets, four times daily before meals and at bedtime, for about two weeks to achieve maximum effect.

Form Supplied: Bottles of 100 tablets.

Source: Smith-Dorsey, Lincoln, Neb.

Pambromal Tablets

Description: Each tablets contains: Pamabrom (2-amino-2-methyl-propanol-1-8-bromotheophyllinate), 50 mg.; *d*-amphetamine sulfate, 2.5 mg.; carbromal, 130 mg.; and salicylamide, 250 mg.

Indications: For the control of dysmenorrhea and premenstrual tension. Promotes diuresis, averts edema and weight gain, relaxes tensions, alleviates pain, and elevates mood.

Administration: One tablet taken four times daily starting 4 to 7 days before onset of menstrual period and continuing through symptoms.

Form Supplied: Bottles of 24 and 100 tablets.

Source: Whittier Laboratories, Chicago, Ill.

Panmycin Aquadrops

Description: A stable chocolate-mint flavored liquid containing, in each cc., tetracycline equivalent to 100 mg. tetracycline HCl. Preserved with methylparaben 0.075%, propylparaben 0.025% and sodium metabisulfite 0.1%.

Indications: Treatment of diseases caused by gram positive and negative organisms.

Administration: Children under 20 pounds body weight, 12 to 15 drops into mouth or mixed with formula or juice four times daily.

Form Supplied: 10-cc. bottles with droppers.

Source: The Upjohn Company, Kalamazoo, Mich.

Panmycin Syrup, 125 mg.

Description: A stable chocolate-mint flavored syrup containing in each 5 cc. the equivalent activity of 125 mg. tetracycline HCl. Preserved with methylparaben 0.075%, propylparaben 0.025% and sodium metabisulfite 0.1%.

Indications: Treatment of diseases caused by gram positive and negative organisms.

Administration: Children, one-half teaspoonful per 20 to 50 lbs. of body weight; adults, one to two teaspoonfuls four times daily.

Form Supplied: 2-oz. and 1-pt. bottles.

Source: The Upjohn Company, Kalamazoo, Mich.

Other New Products

(Chemicals, clinical trial drugs, diagnostic aids, and equipment for the retail and hospital pharmacy)

Anti-Canine Distemper and Anti-Infectious Hepatitis Serum

The *Anchor Serum Company* has marketed a bivalent anti-canine distemper and anti-infectious hepatitis serum for prophylaxis (1–2 cc. per pound of body weight) after exposure, or therapy (2 cc. per pound) where symptoms of either disease have appeared. As a preventive, a dose of 0.5 cc. per pound is recommended.

Azulene

The anti-inflammatory principle of chamomile, azulene, is commerically available from *Dragoco Holzminden*, Hamburg, Germany. It is used prophylactically in cosmetics to prevent phlogistic reactions of the skin.

Blockain Hydrochloride Solution

A solution containing propoxycaine HCl 0.5% for dental use in nerve block and infiltration anesthesia has been marketed by *George A. Breon & Company* in 30-cc. multiple-dose vials.

Bristamin Tablets—New Dosage Size

Tablets containing phenyltoloxamine dihydrogen citrate equivalent to 50 mg. of the base have been marketed by *Bristol Laboratories Inc.* in bottles of 100 scored tablets. The antihistamine will continue to be available in the 25-mg. tablet also.

Caffeine—Fine Granular Anhydrous

A new, free-flowing fine granular form of anhydrous caffeine U.S.P. has been made available by *Chas. Pfizer & Co., Inc.* It is recommended to manufacturers of formulations.

Calcinatal Tablets

Prenatal tablets containing calcium lactate, aluminum hydroxide, and vitamins and minerals recommended for pregnant and lactating women have been announced by *Nion Corporation.*

Delta-Cortef Tablets, 1 mg.

In addition to 5-mg. tablets already available, *The Upjohn Company* is now marketing Delta-Cortef tablets of prednisolone in a 1-mg. size. The new 1-mg. tablets are supplied in bottles of 100.

Incremin Drops

A cherry-flavored liquid for improving the appetite and stimulating growth of infants has been marketed by *Lederle Laboratories.* Each cc. (20 drops) of the liquid contains: L-lysine HCl, 300 mg.; vitamin B_{12}, 25 mcg.; thiamine HCl, 10 mg.; pyridoxine HCl, 5 mg.; alcohol, 1%. Incremin is available in 15-cc. plastic dropper bottles.

Kling Conform Bandage
Surgical Elastic Hosiery
Sterile Absorbent Fibre

Johnson & Johnson has marketed Kling conform surgical cotton bandage, surgical elastic hosiery of nylon, and Red Cross sterile absorbent of viscose rayon which is used like absorbent cotton.

Meratran Tablets—New Package Size

The Wm. S. Merrell Co. has made its pink 1-mg. tablets of pipradrol HCl available in bottles of 1,000 as well as 100 tablets.

Mycostatin Ointment
Mycostatin Vaginal Tablets

Mycostatin (nystatin) ointment contains 100,000 units of the antifungal antibiotic per Gm. of Plastibase (oleaginous). Each vaginal tablet contains 100,000 units of nystatin and 0.95 Gm. of lactose. Both dosage forms are marketed by *E. R. Squibb & Sons* for local treatment of moniliasis. The ointment, available in 1-oz. tubes, is applied directly to the mycotic lesions once to several times daily. Mycostatin vaginal tablets are inserted into the vagina once or twice daily. Available individually foil-wrapped in packages of 15.

Natalins-PF Capsules

A phosphorus-free mixture of 10 vitamins with iron and calcium for dietary supplementation in pregnancy and lactation has been marketed by *Mead Johnson & Company.* The daily dose is 3 capsules. Available in bottles of 100.

Nebs Tablets

Tablets containing acetyl-*p*-aminophenol for relief of headache, minor neuralgia, muscular aches and minor discomforts of the menstrual period are marketed by *The Norwich Pharmacal Co.* The tablets are available in bottles of 30.

Prelafal Tablets

Ayerst Laboratories have marketed a dietary supplement in maternal nutrition containing in each tablet: vitamin A, 2,000 u.; D, 200 u.; C, 50 mg.; thiamine mononitrate, 1 mg.; riboflavin (B_2), 1 mg.; nicotinamide, 10 mg.; pyridoxine HCl (B_6), 2 mg.; B_{12}, 2 mcg.; folic acid, 0.334 mg.; menadione, 0.334 mg.; calcium lactate, 250 mg.; dried aluminum hydroxide gel, 200 mg. Prelafal is available in 100's and in twin packs of 500 (2 × 250).

Pro-Acet Douche Concentrate

Polyethylene envelopes containing in each a single dosage of 10 cc. of the concentrated liquid to be diluted with two quarts of water to prepare a douche are now marketed by *Pro-Acet, Inc.* Ingredients include lactic, citric and acetic acids, sodium lauryl sulfate, lactose, dextrose, and sodium acetate.

Urecholine Tablets—New Size

Urecholine is now available from *Sharp & Dohme* in a 10-mg. tablet as well as the 5-mg. size to facilitate greater ease of administration. It is supplied in bottles of 100 tablets. Urecholine is also available in 1-cc. ampuls containing 5-mg. in aqueous solution for subcutaneous administration.

Vasoxyl Nasal Spray—New Package

The nasal spray containing 0.25% methoxamine HCl marketed by *Burroughs Wellcome & Co.* is now available in ½-oz. plastic bottles in addition to the 1-oz. dropper bottles and 1-pt. bottles.

Zirnox Lotion

Bristol Laboratories Inc. has marketed Bristamin dihydrogen citrate 1% lotion with 4% zirconium oxide for prevention and treatment of poison ivy, oak and sumac. Available in 6-oz. bottles.

NEW PRESCRIPTION PRODUCTS INDEX

APRIL, 1955–OCTOBER, 1955

BY PRODUCT

Achromycin Ointment with Hydrocortisone, Lederle, May, 322
Achromycin Ointment (Ophthalmic) with Hydrocortisone, Lederle, May, 322
Achromycin Pharyngets and Achromycin Troches, Lederle, Apr., 260
Achromycin SF Capsules, Lederle, June, 388
Achromycin SF for Oral Suspension, Lederle, June, 388
Achromycin Surgical Powder, Lederle, June, 389
Acidiron Tablets, Walker, July, 451
Angicaps Capsules, Pro-Acet, Sept., 578
Antimumps Serum (Human), Concentrated, Hyland, Aug., 513
Antipertussis Serum (Human), Concentrated, Hyland, Aug., 513
Arlidin-Hydrochloride Tablets and Solution, U.S. Vitamin, July, 451
Armyl + F Capsulette, Armour, Sept., 578
Ascorbic Acid Tablets, West-ward, July, 453
Ascriptin Tablets, Rorer, Sept., 578
Asterol Powder—Nonlegend, Hoffman-La Roche, Sept., 580

Bardase Liquid, Parke-Davis, Apr., 261
Bicillin Poultry Formula, Wyeth, Sept., 580
Biomydrin-F Nasal Spray, Nepera, July, 451
Bonadoxin Tablets, Roerig, Aug., 513
Bonamine Chewing Tablets, Pfizer, July, 453
Butiserpine Tablets, McNeil, July, 451

CAP-FILL Capsule Filler, CAP-FILL Products, May, 323
Ceniron and Ceniron Plus Tablets, Central Pharmacal, Sept., 580
Cherrin Granules, Ascher, Sept., 580
Chlorostrep Kapseals, Parke-Davis, Aug., 513
Chlor-Trimeton Repetabs, 12 mg., Schering, Aug., 516
Co-Iron Tablets, Haug Drug, May, 322
Colostat Suspension, Schenley, Apr., 257
Combistrep Solution (Vet.), Pfizer, Apr., 260
Convalets Filmtabs, Abbott, May, 322
Corovas Tymcaps Capsules, Grant, July, 451
Corticloron Nasal Spray, Schering, Apr., 257
Cortisporin Ointment, Burroughs Wellcome, Sept., 578
Cortril Vaginal Tablets, Pfizer, July, 453

Delta-Cortef Tablets, Upjohn, Sept., 578
Deltasone Tablets, Upjohn, Sept., 578
Deltra Tablets, Sharp & Dohme, Aug., 514
Dibuline Sulfate Sterile Solution, Sharp & Dohme, Aug., 514
Di-Steroid Suspension—new dosage form, Kremers-Urban, July, 453
Donna Extentabs, Robins, June, 388
Dorbane Suspension—new dosage form, Schenley, Apr., 261
Dorsacaine—new package, Smith-Dorsey, Sept., 580
Dura-Tab S.M. Homatal, Wynn Pharmacal, Aug., 514

Elixophyllin Elixir, Sherman, May, 322
Elpagen with Codeine Tablets, Patch, May, 323

Falgos Tablets, American Ferment, Aug., 514
Florinef-S Lotion and Ointment, Squibb, July, 452
Furaspor Cream—new size, Eaton, Sept., 580

Gantrisin Nasal Solution—Nonlegend, Hoffman-La Roche, Sept., 580
Gentian 'E.V.' Supprettes, Webster, June, 389
Glytheonate with Phenobarbital and Reserpine, Patch, Sept., 579

Heparin Sodium Sterile Solution—5,000 U., Upjohn, Sept., 580
Heptuna Plus Capsules—new size, Roerig, May, 324
Histalme Duracaps Capsules, Meyer, Aug., 514
Hollandex Silicone Ointment with Vitamins A and D, Holland-Rantos, Aug., 516
Household Glove Patch Test Kit, Pioneer Rubber, Aug., 516
Hydeltra Tablets, Sharp & Dohme, Sept., 579
Hydrospray Nasal Suspension, Sharp & Dohme, Sept., 579

Ion-o-trate Additive (Electrolyte) Solutions, Abbott, Apr., 261
Isolyte Intravenous Solution, Don Baxter, Aug., 516
Isopto Cortisone Ophthalmic Suspension, Alcon, July, 452
Isopto Hydrocortisone Ophthalmic Suspension, Alcon, July, 452

Kaobiotic Suspension (Vet.) and Tablets (Vet.), Upjohn, Sept., 581
Kaprylex Capsules, Strasenburgh, Apr., 261

Lactinex Granules—new dosage form, Hynson, Westcott & Dunning, Apr., 261
Lactofort Powder, White, Apr., 261
Leptospira Canicola Icterohemorrhagiae Bacterin (Vet.), Lederle, Apr., 261
Lubriderm-AC Lotion, Texas Pharmacal, Sept., 581
Luminal Ovoids—replacing oral tablets, Winthrop-Stearns Apr., 261

Marezine Suppositories, Burroughs Wellcome, July, 453
Mebroin—formerly Mebaroin, Winthrop-Stearns, Apr., 261
Medomin Tablets, Geigy, May, 322
Meratran with Reserpine Tablets, Merrell, Aug., 514
Mestinon Bromide Tablets, Hoffmann-La Roche, July, 452
Methotrexate Tablets, Lederle, Apr., 261
Meticortelone Tablets, Schering, Aug., 514
Meticorten Tablets, Schering, Apr., 257
Milontin Suspension, Parke-Davis, May, 323
Miltown Tablets, Wallace, Aug., 515
Mio-Pressin Capsules, SKF, Apr., 257
Monodral Bromide with Mebaral, Winthrop-Stearns, Apr., 257
Monodral Elixir, Winthrop-Stearns, May, 324
MorCal Food Supplement, Schenley, July, 453
Mumps Vaccine, Lederle, Sept., 579
Mycisulfa Tablets (Vet.), Upjohn, Sept., 581
Mysteclin Capsules, Squibb, Apr., 258

Neobon Capsules, Roerig, Aug., 515
Neo-Cortef Lotion, Upjohn, Aug., 515
Neo-Cortef Nasal Spray—new strength, Upjohn, Sept., 581
Neo Semhyten Capsules, Massengill, Aug., 515
Neosporin Antibiotic Ointment—new tube size, Burroughs Wellcome, May, 324
Neo-Synephrine Pediatric Nasal Spray, Winthrop-Stearns, July, 453
Neo-Vagisol Suppositories, Smith-Dorsey, Sept., 579
Nitretamin Tablets, Squibb, Sept., 579
Nitrol Tablets, Kremers-Urban, June, 388
Noludar Tablets and Elixir, Hoffmann-La Roche, May, 324
Normal Serum Albumin (Human), Salt-Poor, Hyland, Mar., 195; 5% Solution in Saline, Aug., 515
Nufacton Tablets, Organon, May, 323

Obron Capsules—new size, Roerig, May, 324
Otamylon Ear Drops, Winthrop-Stearns, Aug., 516
Oxucide Syrup, Breon, June, 388

Panmycin Drops, Upjohn, Apr., 258
Panmycin Readimixed, Upjohn, Apr., 258; Suspension, May, 324
Panmycin Sterile Injection, Upjohn, Sept., 579
Pathilon Tridihexethide Tablets, Lederle, May, 323
Pathilon Tridihexethide with Phenobarbital Tablets, Lederle, June, 388
Pantho-F Cream, U.S. Vitamin, Aug., 515
Pen-SF Capsules, Pfizer, May, 323
Pentaerythritol Tetranitrate Tablets; —with Phenobarbital Tablets, West-ward, Sept., 581
Phenaphen with Codeine Phosphate 1 Gr. Capsules, Robins, May, 324
Piperat Tartrate Tablets, Lincoln, Apr., 258
Polycycline Aqueous 125, Bristol, Aug., 517
Polycycline Aqueous Pediatric Drops, Bristol, Aug., 517
Polycycline Aqueous 250, Bristol, Apr., 258
Polycycline Ointment, Bristol, Aug., 516
Polycycline Ophthalmic Ointment, Bristol, Aug., 516
Polycycline Suspension with Triple Sulfonamides, Bristol, July, 452
Pre-Mens Tablets with *d*-Amphetamine, Purdue Frederick, June, 388
Prenatal Tablets, Stuart, June, 389
Pyribenzamine Anesthetic Solution and Jelly, Ciba, May, 323

QuerSerpin Tablets, Haskell, Apr., 258

Reditrin Capsules, Sharp & Dohme, July, 452
Reserpine Alkaloid Tablets, West-ward, Aug., 517
Reserpoid Elixir, Upjohn, Sept., 579
Roetinic Capsules—new size, Roerig, May, 324
Ronuvin Oral, Kremers-Urban, May, 324

Sandril—new dosage forms, Lilly, May, 324
Scopamal Tablets, Miller, Apr., 259
Secobarbital and Amobarbital Capsules, West-ward, Sept., 581
Selsun Sulfide Jelly, Abbott, Apr., 259
Senilex Tablets, Durst, Apr., 259
Serfin Tablets—new size, Parke-Davis, Sept., 581
Serolfia Tablets, Ascher, July, 453
Serpate Tablets, Vale, May, 323
Serpedon Tablets, Walker, May, 324
Serpine Tablets, Pitman-Moore, Apr., 259
Solu-Cortef Sterile for Injection, Upjohn, Sept., 580
Steclin Suspension, Squibb, Apr., 259; Oral Suspension, Sept., 581
Stental Extentabs, Robins, July, 452
Steraject Cartridge—improved, Pfizer, Aug., 517
Sterane Tablets, Pfizer, Sept., 580
Sucaryl—improved, Abbott, Sept., 581
Sulfastrep Tablets (Vet.), Sharp & Dohme, Aug., 517

Surgical Cement, Graham-Field Surgical, July, 453
Sustagen, Mead Johnson, Aug., 517

Tedral Suspension, Warner-Chilcott, Aug., 517
Terramycin-SF Capsules, Pfizer, Apr., 259
Terramycin-SF Oral Suspension, Pfizer, July, 453
Tetracyn-SF Capsules, Pfizer, Apr., 259
Tetracyn-SF Oral Suspension, Pfizer, June, 389
Theelin R-P Solution, Parke-Davis, Aug., 516
Theron Liquid, Stuart, June, 389
Thorazine Hydrochloride Syrup, SKF, Apr., 259
Toclase Syrup, Toclase Expectorant Compound, Pfizer, Apr., 259; Tablets, 260
Tricoloid with Phenobarbital Tablets, Burroughs Wellcome, July, 453
Triscocort Spraypak, SKF, Apr., 260
Tri-Synar Tablets, Armour, May, 324
Troph-Iron (Liquid), SKF, Apr., 260
Tyrothricin in Ointments, McKesson & Robbins, Aug., 517
Tyzine Pediatric Nasal Drops, Pfizer, Aug., 517

Urosulfin Tablets, Nepera, Aug., 517

Valmid Tablets, Eli Lilly, July, 452
Verapene Tablets, Wampole, Apr., 260
Vergo Cream, Daywell, Aug., 517
Vertigon Tablets, Neoco, Sept., 581
Vi-Daylin Drops, Abbott, July, 453
Viterra Capsules—new size, Roerig, May, 324
Viterra Therapeutic Capsules—new size, Roerig, May, 324

Wigraine Tablets, Organon, Aug., 516

BY MANUFACTURER

Abbott Laboratories
Convalets Filmtabs, May, 322
Ion-o-trate Additive (Electrolyte) Solutions, Apr., 261
Selsun Sulfide Jelly, Apr., 259
Sucaryl—improved, Sept., 581
Vi-Daylin Drops, July, 453
Alcon Laboratories, Inc.
Isopto Cortisone Ophthalmic Suspension, July, 452
Isopto Hydrocortisone Ophthalmic Suspension, July, 452
American Ferment Co., Inc.
Falgos Tablets, Aug., 514
Armour Laboratories
Armyl + F Capsulette, Sept., 578
Tri-Synar Tablets, May, 324
B. F. Ascher & Company, Inc.
Cherrin Granules, Sept., 580
Serolfia Tablets, July, 453
Don Baxter, Inc.
Isolyte Intravenous Solution, Aug., 516
George A. Breon and Company, Inc.
Oxucide Syrup, June, 388
Bristol Laboratories, Inc.
Polycycline Aqueous 125, Aug., 517
Polycycline Aqueous Pediatric Drops, Aug., 517
Polycycline Aqueous 250, Apr., 258
Polycycline Ointment, Aug., 516
Polycycline Ophthalmic Ointment, Aug., 516
Polycycline Suspension with Triple Sulfonamides, July, 452
Burroughs Wellcome & Company (USA), Inc.
Cortisporin Ointment, Sept., 578
Marezine Suppositories, July, 453
Neosporin Antibiotic Ointment—new tube size, May, 324
Tricoloid with Phenobarbital Tablets, July, 453
CAP-FILL PRODUCTS Co., Inc.
CAP-FILL Capsule Filler, May, 323
Central Pharmacal Company
Ceniron and Ceniron Plus Tablets, Sept., 580
Ciba Pharmaceutical Products, Inc.
Pyribenzamine Anesthetic Solution and Jelly, May, 323
Daywell Laboratories
Vergo Cream, Aug., 517
S. F. Durst & Co., Inc.
Senilex Tablets, Apr., 259
Eaton Laboratories, Inc.
Furaspor Cream—new size, Sept., 580
Geigy Company, Inc.
Medomin Tablets, May, 322
Graham-Field Surgical Co.
Surgical Cement, July, 453
Grant Chemical Co., Inc.
Corovas Tymcaps Capsules, July, 451
Charles C. Haskell & Co., Inc.
QuerSerpin Tablets, Apr., 258
Haug Drug Co.
Co-Iron Tablets, May, 322
Hoffmann-La Roche Inc.
Asterol Powder—Nonlegend, Sept., 580
Gantrisin Nasal Solution—Nonlegend, Sept., 580
Mestinon Bromide Tablets, July, 452
Noludar Tablets and Elixir, May, 324
Holland-Rantos Co., Inc.
Hollandex Silicone Ointment with Vitamins A and D, Aug., 516
Hyland Laboratories
Antimumps Serum (Human), Concentrated, Aug., 513
Antipertussis Serum (Human), Concentrated, Aug., 513
Normal Serum Albumin (Human), Salt-Poor, Mar., 195; 5% Solution in Saline, Aug., 515
Hynson, Westcott & Dunning, Inc.
Lactinex Granules—new dosage form, Apr., 261
Kremers-Urban Company
Di-Steroid Suspension—new dosage form, July, 453
Nitrol Tablets, June, 388
Ronuvin Oral, May, 324
Lederle Laboratories Division, American Cyanamid Company
Achromycin Ointment with Hydrocortisone, May, 322
Achromycin Ointment (Ophthalmic) with Hydrocortisone, May, 322
Achromycin Pharyngets and Achromycin Troches, Apr., 260
Achromycin SF Capsules, June, 388
Achromycin SF for Oral Suspension, June, 388
Achromycin Surgical Powder, June, 389
Leptospira Canicola Icterohemorrhagiae Bacterin (Vet.), Apr., 261
Methotrexate Tablets, Apr., 261
Mumps Vaccine, Sept., 579
Pathilon Tridihexethide Tablets, May, 323
Pathilon Tridihexethide with Phenobarbital Tablets June, 388
Eli Lilly and Company
Sandril—new dosage forms, May, 324
Valmid Tablets, July, 452
Lincoln Laboratories, Inc.
Piperat Tartrate Tablets, Apr., 258
The S. E. Massengill Company
Neo Semhyten Capsules, Aug., 515
McKesson & Robbins, Inc.
Tyrothricin in Ointments, Aug., 517
McNeil Laboratories, Inc.
Butiserpine Tablets, July, 451
Mead Johnson & Co.
Sustagen, Aug., 517
The William S. Merrell Company
Meratran with Reserpine Tablets, Aug., 514
Meyer Chemical Company, Inc.
Histalme Duracaps Capsules, Aug., 514
E. S. Miller Laboratories, Inc.
Scopamal Tablets, Apr., 259
Neoco Corporation
Vertigon Tablets, Sept., 581
Nepera Chemical Company, Inc.
Biomydrin-F Nasal Spray, July, 451
Urosulfin Tablets, Aug., 517
Organon Inc.
Nufacton Tablets, May, 323
Wigraine Tablets, Aug., 516
Parke, Davis & Company, Inc.
Bardase Liquid, Apr., 261
Chlorostrep Kapseals, Aug., 513
Milontin Suspension, May, 323
Serfin Tablets—new size, Sept., 581
Theelin R-P Solution, Aug., 516
E. L. Patch Company
Elpagen with Codeine Tablets, May, 323
Glytheonate with Phenobarbital and Reserpine, Sept., 579
Pfizer Laboratories, Chas. Pfizer & Company, Inc.
Bonamine Chewing Tablets, July, 453
Combistrep Solution (Vet.), Apr., 260
Cortril Vaginal Tablets, July, 453
Pen-SF Capsules, May, 323
Steraject Cartridge—improved, Aug., 517
Sterane Tablets, Sept., 580
Terramycin-SF Capsules, Apr., 259
Terramycin-SF Oral Suspension, July, 453
Tetracyn-SF Capsules, Apr., 259
Tetracyn-SF Oral Suspension, June, 389
Toclase Syrup, Toclase Expectorant Compound, Apr., 259; Tablets, 260
Tyzine Pediatric Nasal Drops, Aug., 517
The Pioneer Rubber Co.
Household Glove Patch Test Kit, Aug., 516
Pitman-Moore Company
Serpine Tablets, Apr., 259
Pro-Act, Inc.
Angicaps Capsules, Sept., 578
Purdue Frederick Company
Pre-Mens Tablets with d-Amphetamine, June, 388
A. H. Robins Company, Inc.
Donna Extentabs, June, 388
Phenaphen with Codeine Phosphate 1 Gr. Capsules, May, 324
Stental Extentabs, July, 452
J. B. Roerig & Co., Division, Chas. Pfizer & Co., Inc.
Bonadoxin Tablets, Aug., 513
Heptuna Plus Capsules—new size, May, 324
Neobon Capsules, Aug., 515
Obron Capsules—new size, May, 324
Roetinic Capsules—new size, May, 324
Viterra Capsules—new size, May, 324
Viterra Therapeutic Capsules—new size, May, 324
William H. Rorer, Inc.
Ascriptin Tablets, Sept., 578
Schenley Laboratories
Colostat Suspension, Apr., 257
Dorbane Suspension—new dosage form, Apr., 261

(Concluded on next page)

New Rx Products Index

• • • • • • • • • • (*from preceding page*)

MorCal Food Supplement, July, 453
Schering Corporation
Chlor-Trimeton Repetabs, 12 mg., Aug., 516
Corticloron Nasal Spray, Apr., 257
Meticortelone Tablets, Aug., 514
Meticorten Tablets, Apr., 257
Sharp & Dohme, Division, Merck & Co., Inc.
Deltra Tablets, Aug., 514
Dibuline Sulfate Sterile Solution, Aug., 514
Hydeltra Tablets, Sept., 579
Hydrospray Nasal Suspension, Sept., 579
Reditrin Capsules, July, 452
Sulfastrep Tablets (Vet.), Aug., 517
Sherman Laboratories
Elixophyllin Elixir, May, 322
Smith-Dorsey, Division of the Wander Company
Dorsacaine—new package, Sept., 580
Neo-Vagisol Suppositories, Sept., 579
Smith, Kline & French Laboratories, Inc.
Mio-Pressin Capsules, Apr., 257
Thorazine Hydrochloride Syrup, Apr., 259
Trisocort Spraypak, Apr., 260
Troph-Iron (Liquid), Apr., 260
E. R. Squibb & Sons, Div., Olin Mathieson Chem. Corp.
Florinef-S Lotion and Ointment, July, 452
Mysteclin Capsules, Apr., 258
Nitretamin Tablets, Sept., 579
Steclin Suspension, Apr., 259; Oral Suspension, Sept., 581
R. J. Strasenburgh Company
Kaprylex Capsules, Apr., 261
The Stuart Company
Prenatal Tablets, June, 389
Theron Liquid, June, 389
Texas Pharmacal Co.
Lubriderm-AC Lotion, Sept., 581
U. S. Vitamin Corporation
Arlidin Hydrochloride Tablets and Solution, July, 451
Pantho-F Cream, Aug., 515
The Upjohn Company
Delta-Cortef Tablets, Sept., 578
Deltasone Tablets, Sept., 578
Heparin Sodium Sterile Solution—5,000 U., Sept., 580
Kaobiotic Suspension (Vet.) and Tablets (Vet.), Sept., 581
Mycisulfa Tablets (Vet.), Sept., 581
Neo-Cortef Lotion, Aug., 515
Neo-Cortef Nasal Spray—new strength, Sept., 581
Panmycin Drops, Apr., 258
Panmycin Readimixed, Apr., 258; Suspension, May, 324
Panmycin Sterile Injection, Sept., 579
Reserpoid Elixir, Sept., 579
Solu-Cortef Sterile for Injection, Sept., 580
Vale Chemical Company, Inc.
Serpate Tablets, May, 323
Walker Laboratories, Inc.
Acidiron Tablets, July, 451
Serpedon Tablets, May, 324
Wallace Laboratories, Inc.
Miltown Tablets, Aug., 515
Wampole Laboratories
Verapene Tablets, Apr., 260
Warner-Chilcott Laboratories
Tedral Suspension, Aug., 517
The Wm. A. Webster Co.
Gentian 'E.V.' Supprettes, June, 389
West-ward, Inc.
Ascorbic Acid Tablets, July, 453
Pentaerythritol Tetranitrate Tablets; —with Phenobarbital Tablets, Sept., 581
Reserpine Alkaloid Tablets, Aug., 517
Secobarbital and Amobarbital Capsules, Sept., 581
White Laboratories, Inc.
Lactofort Powder, Apr., 261
Winthrop-Stearns Inc.
Luminal Ovoids—replacing oral tablets, Apr., 261
Mebroin—formerly Mebaroin, Apr., 261
Monodral Bromide with Mebaral, Apr., 257
Monodral Elixir, May, 324
Neo-Synephrine Pediatric Nasal Spray, July, 453
Otamylon Ear Drops, Aug., 516
Wyeth Inc.
Bicillin Poultry Formula, Sept., 580
Wynn Pharmacal Corporation
Dura-Tab S.M. Homatal, Aug., 514

MONTHLY DRUG INDEX

Ambar Tablets and Extentabs..... 642
Anti-Canine Distemper and Anti-Infectious Hepatitis Serum..... 644
Azulene..... 644
Bacitracin-Neomycin Ointment and Ophthalmic Ointment..... 642
Blockain Hydrochloride Solution..... 644
Bristamin Tablets—new dosage size..... 644
Caffeine—Fine Granular Anhydrous..... 645
Calcinatal Tablets..... 645
Cortef Oral Suspension..... 642
Delta-Cortef Tablets, 1 mg..... 645
Diafen Tablets..... 642
Dipaxin Tablets..... 642
Dura-Tab S.M. Dexetal..... 643
Dura-Tab S.M. *d*-Amphetamine Sulfate..... 643
Equanil Tablets..... 643
Ilotycin Glucoheptonate I.V. for Injection..... 643
Ilotycin Solution I.M..... 643
Incremin Drops..... 645
Kling Conform Bandage; Surgical Elastic Hosiery; Sterile Absorbent Fibre..... 645
Lotusate Caplets..... 643
Meratran Tablets—new package size..... 645
Mycitracin Ophthalmic Ointment..... 643
Mycostatin Ointment and Vaginal Tablets..... 645
Natalins-PF Capsules..... 645
Nebs Tablets..... 645
Nembu-Serpin Filmtab..... 644
Nitralox Tablets..... 644
Pambromal Tablets..... 644
Panmycin Aquadrops..... 644
Panmycin Syrup, 125 mg..... 644
Prelafal Tablets..... 645
Pro-Acet Douche Concentrate..... 645
Urecholine Tablets—new size..... 645
Vasoxyl Nasal Spray—new package..... 645
Zirnox Lotion..... 645

ADVERTISING INDEX

Abbott Laboratories, Erythrocin.....634, 635
Iberol.....inside front cover
Sur-Bex..... 641
The American Druggists' Insurance Company 598
Ames Company, Inc., Aminet; Diatussin.... 596
Chesebrough Mfg. Co., Vaseline Petrolatum Gauze Dressings..... 595
Hynson, Westcott & Dunning, Inc., Thantis Lozenges..... .....outside back cover
Lancet Laboratory Ltd..... 592
Lederle Laboratories, Incremein..... 632
Eli Lilly and Company, V-Cillin..... 586
J. B. Lippincott Co., Dispensatory of the U.S.A..... 595
The S. E. Massengill Company, Salcort..... 631
Parke, Davis & Company, Combex products. 605
Pfizer Laboratories, Toclase.....638, 639
J. B. Roerig and Company, Stimavite Tastitabs; Neobon..... 591
Schering Corporation, Hormones.inside back cover
Sharp & Dohme, Tetrazets..... 599
Smith, Kline & French Laboratories, Benzedrex Inhaler..... 603
Warner-Chilcott Laboratories, Calcisalin..... 627
Winthrop-Stearns, Inc., Pediatric Neo-Synephrine..... 601
Wyeth, Inc., Pen-Vee-Oral..... 593